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An Excursion Into Utilitarian Analysis

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Abstract:

Presents a theoretical approach which figures prominently in formal and mathematical theories of behavior. Utilitarian view of attitude and behavior; Decision theory as a major breeding ground of the class of models with the utilitarian label: Theory of achievement motivation; Optimal foraging theory; Signal detection theory.

Across a wide range of disciplines and phenomena, a particular theoretical approach is at the center of attempts to understand human behavior. This theoretical approach, roughly characterized as Subjective Expected Utility (SEW) theory, figures prominently in formal and mathematical theories of behavior, as well as in intuitive and implicit analyses of behavior deriving from foil; theory. A selection of SEU approaches is described. The SEU approach is then used to develop a theoretical analysis of cross-race social experience and its relation to the cross-racial face recognition phenomenon.

Whatever attributes we associate with the idea of "science," and whatever ritual purifications derive from our methodology, the source of interpretation of events, observations, or data is grounded in what we know as individuals. To the extent that this personal knowledge survives the transposition to interpersonal communication, interpretation can be grounded in the knowledge that is shared among the individuals participating in the particular field of study. Accounts of what we know are developed in many fields of scholarship and are summarized by bodies of assertions known as "theory." Along with certain background information that renders such theory intelligible, these accounts define in a relatively formal way what we know.

I think I may actually believe these things. But there are some difficulties buried here that I want to talk about a little before going on. At the personal level, it is somewhat troublesome that the things we know, the beliefs we have that form the basis for our interpretation of events, comprise such a narrow and unknowably biased subset of human experience. This is not to say that any of us would have chosen to be born somewhere else or to have lived a different life, however, because all the alternatives appear equally limited. I do not believe that we can escape very far from being ourselves, even in the purification rituals of scientific analysis, although this may be the most effective strategy. We have available to us the formal ideas that we can learn and the concepts that are based in our life experience. We probably cannot think the thoughts or generate the associative structures and interpretive contexts of the people we study. To do so may present a problem that is ultimately insurmountable, although

there are some important actions we can (and do) take to reduce it--such as to read and to expose ourselves systematically to new ideas, people, and living conditions. Nonetheless, much of the background knowledge that forms the basis for both scientific and personal interpretation of events is inexplicit, buried in the tacit knowledge of our personal lives. Often this knowledge is brought into theory and added to our collective knowledge, but often it guides our work without being examined.

At the level of a particular discipline, the situation is somewhat different, partly because knowledge is not the only item on the agenda. I am reminded of a little bit of academic wisdom that Allen Wicker left with us on a visit to Plattsburgh some years ago when he said that "academic fields are defined by groups of scholars who agree in advance not to ask certain fundamental questions." You can fill in your own views on fields to which this statement applies, but I daresay that it applies to almost all fields from the point of view of some of their members.

Now, where will this line of thinking take us? It leads first to the ideas that the construction and explication of theory is important and that the development of theory ought to consist partly of rolling back the edges of tacit knowledge and presupposition, in order to bring them into theory. It also leads to the idea that we ought to examine the structure and the implications of the theories that we already have. Such an examination is on-going in many areas, some of which I will touch on briefly. Let me start with a phenomenon that I confront regularly and that seems to me to be an important jumping off point.

A Ubiquitous Theory Of Behavior

I repeatedly have a deja vu experience with theories of behavior. I find that the development of theory in area after area, on topic after topic, turns out to be the same old stuff in different guise. I guess this is not too surprising. I liked the idea of "translating" among theories, and into common terms, that was developed by Don Campbell in his paper on "Social Attitudes and Other Acquired Behavioral Dispositions" (Campbell 1963). He contended that a lot more communality was present than was apparent, and he suggested strategies for seeing it. He concluded, therefore that it was already apparent that theories could be arranged into families and that we could expect to see many equivalences among the specific variations.

Recently the psychologist Gregory Kimble (1990) published an article in the inaugural issue of Psychological Science entitled "Mother Nature's Bag of Tricks Is Small." In it, he points out some communalities across a fairly broad range of psychological phenomena, and he asks his audience to set aside some obvious differences at a concrete level, in order to perceive communalities at a more abstract level. I will ask you to do the same.

First I will present examples of a family of theories of behavior and show how variants occur (how one variant occurs, anyway). Then I will point to some other variants that I have been able to identify, and, finally, I will apply this approach to the analysis of a favorite and enduring stumbling block in my own area of research: facial recognition for own- and other-race persons.

Subjective Expected Utility Theories

The family of theories whose members I encounter repeatedly can be characterized as Subjective Expected Utility (SEU) theories. A central proposition of SEU theories is that the value of some object, act, or event is a function of the sum of the weighted

values of its attributes or consequences. The weight referred to is the subjective probability with which the consequence is associated with the object or act. This is a kind of cost benefit analysis. If the costs have a negative sign, and the benefits have a positive sign, then when the costs and benefits are equal the summation will have a net value of zero. Even this simple kind of formulation can be found lurking in diverse places. You can buy microcomputer programs that will help you make personal decisions using this approach, even when there are zillions of attributes for each decision alternative. Parenthetically, it is interesting to note that these programs allow you to go back and change your assumptions, just in case the model does not conclude that you should choose what you really wanted to choose all along. It is too much like the research process for comfort!

It often seems difficult to collapse highly developed and differentiated theories back into a more generic form, and such action seems to lead to a lack of acceptance by many observers. With Kimble, I have to say to my audience something like: "Now I'd like you to ignore the differentiations, distinctions, and complexities that so-and-so has introduced." But, generally speaking, my audience's professional stock in trade is making, preserving, and marketing distinctions, differentiations, and complexities. It would not be surprising, therefore, if this plea were to fall on deaf ears. So I will try to show how differentiations are made, rather than backtrack from differentiated versions to more primitive ones.

A utilitarian view of attitude and behavior

About twenty five years ago, certain social psychologists became interested in the relationship between attitudes and behavior. I do not know whether at that time they explicitly conceived of their work as strictly utilitarian in nature, but they attempted to predict behavior through the intention to act, as if the value of the intention itself were identical to the value placed on an act in a differentiated SEU model (Ajzen and Fishbein 1980). A fundamental differentiation was made between:

(1) outcomes that are personal, occurring to the actor as intrinsic attributes of the act; and

(2) outcomes that are interpersonal, originating in the behavior of others toward the actor--specifically, their approval.

In one formulation, the first was labeled the "Attitude toward the act," and the second was labeled the "Behavioral norm." The result is an SEU variant in which the general sum of weighted outcome values is differentiated into two separate kinds of outcomes: personal and interpersonal. The theoretical advantage of this differentiation is important. It means that one can investigate the hypothesis that actors give these two sets of outcomes different degrees of importance (i.e., the beta weights for the two components are often different in predicting behavior). But still, we have here a theory in which the overall prediction is made by the sum of two utilities. In other formulations, additional components have been added, such as "personal norms," which can also be viewed as a differentiated utility. Other refinements have been made and continue to be made. The models get more complex, but they are still SEU models.

It is interesting to consider how widely this class of theories is spread through the behavioral sciences. To my mind, it occurs so often that it is reasonable to ask whether there are alternative core theories available. If there are, they are not explicated to the degree that utilitarian theories are, and they have not led to nearly the same diversity of

applications that is attributable to utilitarian ideas. So at this point, let me mention some areas in which utilitarian forms of thinking are prevalent.

Decision Theory

Decision theory is, of course, a major breeding ground of the class of models with the utilitarian label. The various forms of expectancy theory, and the development of the many decision-making criteria that are applied to expectations, are pretty well known. Some of the extensions of this kind of thinking are less well known, and I will point to only a few of them. One is the topic of the lead article in the February 1990 issue of the Journal of Applied Psychology, concerning the economic utility of personnel selection programs and organizational interventions (Raju, Burke and Normand 1990). Utilitarian models are central to many important conceptions of job performance, just as they are central to any theory of motivation and behavior that encompasses the idea of instrumental acts--that is, the idea that actions are consequence-driven. This notion, so central to operant analyses of behavior, suggests that behavior in any given environment is a function of the historical value and probability of the consequences of the various responses in that environment.

Achievement Motivation

Let us dwell for a moment on McClelland's (1955) and Atkinson's (1958) theory of achievement motivation. This is certainly one of the more influential motivation theories for cross-cultural research. The theory of achievement motivation embodies a classic utilitarian analysis. Here is a painfully brief precis of some central propositions from this theory:

A person enters an environment and scans for its possibilities. Through a cueing process, anyone who possesses a high degree of concern for achievement will generate the achievement-related possibilities of this situation. This generation process leads to the "redintegration of affect" that acts as an incentive for the pursuit of achievement goals in that environment. Acts that are instrumental to the attainment of achievement goals are then generated, and behavioral choices are made.

The mathematical development of this theory by Atkinson (1964) is explicitly utilitarian in form and content.

When we turn to the measurement of achievement motivation, we find that the utilitarian structure of the theory is particularly emphasized. The fantasy productions collected in this process are submitted to analysis for three main kinds of content: achievement goals and their value, activities instrumental in goal attainment, and conceptualizations organized around the likelihood of goal attainment. The latter include obstacles, presses, and affect about the possibilities for success and failure. These conceptualizations are familiar to us as the three components of the general utilitarian model: the attributes of acts and the value and the probability of the attributes. Elsewhere, and long ago, it seems, Paul Dreyer and I tried to make the point that to have a motive may usefully be construed as thinking in a utilitarian way about the interrelations of acts and outcomes in the domain of the motive (Malpass and Dryer 1972).

Optimal Foraging Theory

Closer to home for anthropologists is the relatively recent work on optimal foraging theory. This is an approach taken to both contemporary and archaeological populations that embodies a cost benefit analysis of foraging decisions. The idea is that there is a

particular structure to the pattern of food gathering undertaken by these populations, and that it is driven by the economics of energy (by which is meant calories). Central to this line of research is the notion that people and other animals make some form of calculation of the energy that will be gained and expended in harvesting various foods. A major hypothesis is that harvesting is a strategic activity that can be understood in the light of food species availability, risks to health and safety, and other factors that influence the value of the particular food source. For example, Yesner (1981) derived a "proportional hunting" hypothesis: that the biomass distribution across species in the midden of archaeological populations of Aleut hunter-gatherers ought to reflect the proportional availability of the species in the paleo environment. This hypothesis would indicate that foraging was done on the basis of availability, and not on some other preferential scheme. And this is approximately what he found, although he discusses a range of alternative but less plausible interpretations.

The empirical and inferential problems here are complex, and it is by no means clear that utilitarian models will prove to be highly predictive. There are many sets of factors, and the measurement problems are really quite considerable. At the same time, the utilitarian way of thinking is clearly at the center of a lot of research, and the implications and nuances of the model are currently being developed and evaluated.

Signal Detection Theory

Signal detection theory is another theory of choosing. It generally applies to choosing under conditions of uncertainty--that is, when one has a choice of which mistake to make. There are many contexts in which we could describe the meaning of this theory, but the one that is closest to my own interests is in the area of recognition memory. The first example is something that happens often at professional conferences. You see someone you suspect you have seen at a previous meeting, and you have to decide which error you prefer: approaching a stranger, perhaps someone who is not part of the conference, and greeting him as someone you know; or failing to greet someone you have met, who may wonder why you do not remember him. You will decide, based on which error is the more valuable to you, on which accurate responses are the more valuable, and on your judgment of their probabilities. You probably will not make those calculations explicitly, but the evidence is strong that the utilitarian decision model that is embedded in signal detection theory makes good predictions about people's choices in perceptual and memory tasks.

Signal detection theory brings into a perceptual theory the analysis of the factors that influence choice behavior. The theory was initially developed in part to assist in deciding what to do when sailors listening to the sound of a submarine were uncertain as to whether it was ours or theirs. Embedded in the theory is a distinction between what is perceived or remembered and what is reported or done about what is perceived or remembered. This distinction has guided a number of experiments that my students and I have made on person recognition in eyewitness identification, as well as the work of a number of others in that research area. Let me give you a quick example of its use in that context.

"Suggestion" is an important concept in eyewitness identification. There is a fear that if the police suggest to the witness which person is their own suspect, the witness will feel constrained to identify that person. The whole idea of a lineup appears to have been invented in order to spread the possibility of a mistaken identification over a set of

known-to-be-innocent people, known as "foils." So a suspect is placed in a lineup with a set of people who are known to be innocent, and who have the general physical characteristics of the suspect and/or the description of the offender. The assumption is that the witness will identify the person observed committing whatever offense is in question only if he is actually present. Further, if the witness really does not know who it was, or if the guilty person is not present, the witness will either not choose or choose at random. In addition, it appears to be assumed that the witness is indifferent about whether or not to choose someone from the lineup, and that the witness perceives no pressure to choose from the police. But these assumptions can be wrong. There are many ways in which a witness can gain information about which member of a lineup is the suspect and about how strongly the police believe that they have the offender.

The empirical question is how much a witness's willingness to make an identification can be pushed around in the identification process. In one of our studies, we gave instructions that strongly implied that the suspect was present in the lineup, and we omitted from the paper on which the witnesses recorded their identification any opportunity for them to make a nonchoice. The result was that even when the offender was actually not present, 83 percent of the witnesses identified someone from the lineup. By comparison, when witnesses were told that we really did not know whether the offender was present, and when they were provided an opportunity to reject the lineup, only 33 percent of the witnesses erroneously made an identification--which is scarey enough! We interpreted this result to mean that with biased instructions, witnesses were being influenced to make lineup identifications at a much higher rate than they would otherwise have made. Figure 1 presents an abbreviated example of how one might construe the identification decision problem for a witness:

In a subsequent study, we carried this process a step further. In a realistic experiment, we manipulated the severity of the punishment that witnesses were led to believe the offender would receive. The existing literature at the time suggested that if the punishment were believed to be severe, witnesses would be conservative and would choose someone from the lineup at a lower rate than when the possible punishment was trivial. The result was the opposite: when the punishment was to be severe, the witnesses chose someone from the lineup at a greater rate than when the punishment was trivial. The effect was not subtle, and sensitive statistical analysis was not required to detect it. Based on postexperimental interviews, our interpretation was that witnesses would assume the risks and costs of making an identification only if something would really come of it. In this case, the risks and costs included such things as time and energy involved in court appearances and living in the community with the offender's friends and family.

This was an important finding. It underscored the idea that the subjects in this research came with particular constructions of the social context of the choices we would give them. It was clear that we could not easily measure or constrain these constructions for research purposes. But the most important implication that we took from this experiment was that natural social environments contain consequences for behavior that are quite beyond the scale of the consequences generally applicable in other experimental research settings. When something is really at stake, there are new and powerful utilities operating. The trend for research in this area has been to move out of the laboratory context and into other settings--such as public lectures or

convenience stores--so as to capitalize on the more potent utility systems that are available there.

Third World Development

Now let us turn to a very different topic: the implementation of development projects in Third World nations. In a well-crafted analysis, Segall (1983) discusses a number of perspectives drawn from social psychological research that point toward the importance (perhaps I should say the "utility") of localized development projects. He focuses on the Third World, but it seems to me that the analysis would hold equally well for local and regional projects in the USA. Let me briefly mention an example:

Segall concludes his analysis of conformity and autonomy with the comment that, among subsistence level agriculturalists and pastoralists, conformity with the directions taken by community leaders can be expected. The key to cooperation with development efforts originating from outside the community is that they must make ecological and economic sense to the leaders of the community. Development programs that are seen to foster the interests of the community will be likely to have the leaders' support, and thus the support of the community. The structure of this argument is plainly utilitarian. It is easily translated into the language of valued outcomes and their likelihoods. He goes on to point out that these societies are changing, and that greater individual competitiveness is to be expected. His recommendation is that development projects ought to have embedded within them opportunities for individuals to serve their own ends: In other words, multilevel utilities!

The point is straightforward. The fact that development projects are not customarily organized in this way indicates that the people who plan and implement them are not intuitive utilitarians--at least not with respect to the behavior of others. And this is a central aspect of my point about the prevalence of utilitarian thinking. It lurks in all kinds of places, and it is used in intuitive ways as a basis for what might be called functionalist analyses. If it is as prevalent as it appears to be, and if it is as generally useful and valid as its continuing use in a wide range of models suggests, then perhaps it would be useful to structure analyses of phenomena around it--to use systematically the utilitarian structure as a heuristic device. One might think that it is already being used in just this way, in many contexts. But my concern is that, even more often, it is being used in implicit ways and is being applied unevenly, as a part of tacit knowledge--a kind of behavioral folk theory.

Differential Recognition For Own- And Other-Race Faces

Now let me turn to my own interest in this line of thinking: the differential recognition phenomenon, or the "cross-race effect." In general, we find that blacks, whites, and Asians have greater difficulty recognizing individuals from other groups, compared with own-group individuals. In the typical experiment, subjects are shown a number of facial photographs--perhaps twenty--with ten of these of black persons and ten of white persons, sequenced randomly and presented one at a time. Some time later, subjects are shown these twenty faces along with twenty more new ones--again ten white and ten black--all forty faces randomly sequenced. These forty faces would be shown one at a time, and, for each face, subjects would be asked to indicate whether or not it was one of those presented earlier. The finding that blacks, whites, and Asians show lower recognition scores with other-race faces than with own-race faces has been consistent and stable since our first paper on the subject in 1969, as shown in a recent meta-

analysis (Bothwell, Brigham, and Malpass 1989).

All recent statements on the topic reject certain classes of explanation for this phenomenon:

(1) It does not appear to be caused by any simple attribute of the respective sets of people as visual stimuli.

(2) It does not appear to be related to racial/ethnic attitudes.

The Social Experience Problem

Nearly everyone's favorite explanation of the "cross-race effect" is one or another version of an "experience" hypothesis, but there are certain problems with this view. The main problem is a lack of empirical support! Of the studies that have examined the relation of social experience with differential face recognition, almost all have failed to provide empirical support for the idea that there is such a relationship. Also, from the first study onward, the view that investigators have had of social experience in an ethnically diverse social system has been theoretically naive (Malpass and Kravitz 1969). I am allowed the use of strong language here, because my own studies are prominent among them. For example, in our first study we asked for retrospective reports of how many other-race persons the subject had known. In addition, we attempted to identify from our own thinking and experience any social situations in which important social interactions between members of various groups might occur. We asked our subjects how many other-race persons they had interacted with in those environments or roles. We were unable to find any relationship between responses to these items and aspects of other-race recognition performance--singly, totally, or in subscales. This approach seemed to be an obvious first place to look for the experimental basis of differential face recognition, but I am only mildly surprised that we found no empirical relationships. Others have tried similar approaches, with similar results.

The differential recognition effect seems nicely characterized by one of the important attributes of a stereotype: that differences among individuals in the stereotyped group are reduced or underemphasized. Whatever system of information is applied to the categorization of individuals within the outgroup, it has less resolution than the system that is applied to individuals within the ingroup. The important question still is: Where do these contrasts come from? How is it that one can come to make fewer distinctions among one set of objects than among another? I have always thought that being able to accord individuality to outgroup members was the key issue in this problem. But the theoretical structure of the argument did not become clear until I began to think about it in explicitly utilitarian terms.(n1)

A Utilitarian Analysis

The obvious question is: Why is it in our interest to not recognize individual members of other-race groups? This is a difficult question, and even though it may be the obvious question, I think it is one to avoid, at least in the beginning. Instead, we should focus on an alternate question: Why are we so very good at recognizing individuals of our own group? Here the answer is more tractable--and also more frankly utilitarian. We are good at it because individual recognition allows us to improve the average value of our social interactions. This view is based on two considerations. First, the distribution of the value of the outcomes of our social experience is quite variable and offers latitude for increasing the mean value, especially early in life. Second, within our own groups there

are few features of appearance or behavior that reliably differentiate the positive and negative persons in our environment. It is useful to develop a system for identifying and remembering individuals, partly because the bad guys don't wear black hats!

Now let us examine the propositions outlined above. I do not have empirical data on this point, but it seems to me that children in the early school years experience a particularly wide affective range in their social interactions. I cannot remember the last time someone did something painful enough to make me cry, and I cannot remember the last time that I was deliberately pummeled, shoved, or knocked down by someone else. It certainly has not happened since my own college days. And no one has grabbed my toys for years! As I look at children's play groups, it seems to me that children have a broader dynamic range of interaction outcomes than adults.

The possibility of developmental trends is not really the point, however. The point is that, early in life, it becomes useful for us to know who are the good guys and who are the bad guys. We can really make our lives better every day by staying away from the latter and sticking around the former. This situation requires that we know who is what, and it produces strong incentives for learning to identify individuals.

I will try to formalize this idea a bit. All of our social interactions have consequences. These embody various kinds of social resources and rewards. Whatever resources are given or denied, each episode of interaction can be characterized as producing outcomes of a certain value. Across episodes of interaction with an individual, the range of outcome values, each weighted by its relative frequency, produces an outcome value distribution whose expected value is the subjective expected utility of interaction with that person.

We can conceive of utility distributions that are associated with environmental settings, with activities, with persons, or with social groups. Whatever it is that we remember about a person, a setting, etc., it contains some approximation to the central tendency of the utility distribution and some idea of its variability.

Now consider a set of people, each of whom has an associated social utility. The expected value of our social interactions can be shifted upward if we are able to selectively choose with whom we will interact. But to do this, we need to be able to identify individuals and to associate with each of them a remembered history of interaction.

Social Utility Variance

The variability of the distribution of social utilities across persons is important. When the variance of this distribution is high, information about the identity of individuals will be the most useful in improving the predictability of the social utility of our interactions. Under these conditions, the frequency of negative interactions can be reduced and the frequency of positive interactions can be increased through knowledge of which individuals to approach and which to avoid. Therefore, differentiation among individuals will be more useful when the social utility variance is high, because the possibility for improving the average utility is greater.

If the bad guys wore black hats, it would make life somewhat easier. But when appearance cues are not associated with specific regions of the social utility distribution, we are driven to differentiate among individuals on the basis of whatever cues are available, whether they are behavioral, facial, or something else. Skill at extracting individuating information about a person's appearance is a very useful thing and can

enable the process to become highly automatic. It appears that we develop a general system for identifying individuals that is quite flexible, highly configural, and capable of extracting social information about individuals by default (Devine and Malpass 1985).

Let us consider the situation where a group of people in a complex social system share appearance characteristics that differentiate them from other groups. Under what conditions would persons from outside this group develop a facility for recognizing its individual members much like the facility they have for recognizing members of their own group? I think the answer must be that this facility will develop when the social interaction utility distributions for other-group members are similar to the utility distributions for own-group members. When the resources available through interaction with other-group members are of roughly the same average value, and are equally variable, then the same incentives associated with individual differentiation within one's own group would apply. The incentive to extract and remember individuating information about other-group members would be greatest when visible cues to group membership are uncorrelated with both the mean and the variance of the interaction utilities.

According to this view, when the variance of the social utilities that are associated with interaction with members of a given group is small, the mean of the distribution more adequately characterizes each member of the group, and individuals can more easily be treated as if they were alike. If the mean utility that is associated with a group is negative, and the variance is small, then all members of the group may be perceived to have a negative social interaction utility. They can be avoided with little cost and with a potential for improving the quality of life. Under these circumstances, there is no utility to engaging in the kind of further analysis of the appearance of this class of persons that would be required to sort out the good guys from the bad. This circumstance should lead to minimum individuation and to a large recognition deficit, compared to that accorded own-group persons. Here, then, we have an answer to the obvious question.

Some of the implications are interesting. For example, if this analysis is correct, then the exposure of American whites or blacks to each other on television ought not to do much for differential face recognition, simply because there is no outcome contingency involved. The kinds of contingencies, or social exchanges, that are probably important in creating incentives to individuation lie in face-to-face interaction where valued outcomes are at stake.

Conclusion

It appears that the theoretical problem can be clarified through utilitarian analysis. In such a context, it seems understandable that reports of the simple frequency of other-race individuals in one's life will not capture the aspects of social experience that generate the cross-race differential in face recognition. The problem now is to represent this theoretical analysis in empirical studies, in order to inquire into its limitations. I will conclude with some comments on the utilitarian enterprise. I have tried to suggest that utilitarian thinking is widely distributed across the behavioral disciplines, and I have attempted to show how it assists in structuring my analysis of my own research problems. I am reluctant to say that this simple and sovereign theory--to use Allport's (1954) term--is THE explanation for behavior. But I am impressed with its frequency of appearance and with the range of phenomena that it subsumes. I still struggle with the question of what the alternative or competing approaches may be.

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Note

The theoretical statements made here are not about the cognitive processes through which the utilitarian effects under discussion are implemented. For an interesting and contemporary discussion of such cognitive processes, the reader should consult Fiske and Neuberg (1990).

Table 1

Hypothetical Payoff Matrix

	Suspect is the offender	Suspect is not the offender
Witness Chooses suspect	Outcome: Hit Consequences Offender brought to justice will have to confront Offender & family	Outcome: False Alarm Consequences Innocent person convicted Will have to confront suspect & family
Witness does not choose	Outcome: Miss Consequences Guilty criminal set free Police annoyed	Outcome: Correct Rejection Consequences Innocent person exonerated Police annoyed

Adapted from Malpass and Devine (1984).

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