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Abstract

Role playing can be used to forecast decisions, such as “how will our competitors respond if we lower our prices?” In role playing, an administrator asks people to play roles and uses their “decisions” as forecasts. Such an exercise can produce a realistic simulation of the interactions among conflicting groups. The role play should match the actual situation in key respects, such as the role-players should be somewhat similar to those being represented in the actual situations, and role-players should read instructions for their roles before reading about the situation. Role playing is most effective for predictions when two conflicting parties respond to large changes. A review of the evidence showed that role playing was effective in matching results for seven of eight experiments. In five actual situations, role playing was correct for 56 percent of 143 predictions, while unaided expert opinions were correct for 16 percent of 172 predictions. Role-playing has also been used successfully to forecast outcomes in three studies. Successful uses of role playing have been claimed in the military, law, and business.

Disciplines

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Comments

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Role Playing: A Method to Forecast Decisions

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ABSTRACT

Role playing can be used to forecast decisions, such as "how will our competitors respond if we lower our prices?" In role playing, an administrator asks people to play roles and uses their "decisions" as forecasts. Such an exercise can produce a realistic simulation of the interactions among conflicting groups. The role play should match the actual situation in key respects, such as the role-players should be somewhat similar to those being represented in the actual situations, and role-players should read instructions for their roles before reading about the situation. Role playing is most effective for predictions when two conflicting parties respond to large changes. A review of the evidence showed that role playing was effective in matching results for seven of eight experiments. In five actual situations, role playing was correct for 56 percent of 143 predictions, while unaided expert opinions were correct for 16 percent of 172 predictions. Role-playing has also been used successfully to forecast outcomes in three studies. Successful uses of role playing have been claimed in the military, law, and business.

Keywords: analogies, conflict situations, decision-making, experiments, expert opinions, game theory, intentions.

Consider the following situations: (1) A union threatens to strike against an organization. The firm can meet some union demands, and it has a final chance to make an offer before a contract expires. Which of the feasible offers would be most effective in reducing the likelihood of a strike? (2) A special interest group considers a sit-in to convince the government to provide subsidies to its members. The government believes the subsidy to be unwise and is willing to make only minor concessions. How likely is it that a sit-in would succeed? (3) A firm selling industrial products to a small number of customers plans major changes in its product design. The changes are risky but potentially profitable. It wants to make the changes without its competitors finding out. Would the firm=s three prime customers accept the changes? (4) A law firm is considering strategies for a defendant. Which defense would be most persuasive to the jury? (5) Two university professors are negotiating with the publisher of their journal to try to secure a better contract. The two parties are currently far apart, and failure to agree would be costly to both sides. What should the professors do to obtain a better contract?

In these situations, the decisions depend upon the interactions of two parties. In such cases, either party could use role playing to help it to accurately forecast its own decisions and those of the other parties. In fact, role playing has been used successfully in each of the above situations.

When one party incorrectly forecasts decisions by another party, the consequences can be damaging. For example, in 1975, a consortium sponsored by the Argentine government tried to purchase the stock of the British-owned Falkland Islands Company, a monopoly that owned 43 percent of the land in the Falklands, employed 51 percent of the labor force, exported all the wool produced, and operated the steamship run to South America. The stockholders wanted to sell, especially because the Argentine consortium was reportedly willing to pay "almost any price." However, the British government stepped in to prevent the sale. The actual solution in the Falklands (there was a war) left both sides worse off than before. In contrast, a sale of the Falkland Island Company would have benefited both countries. Apparently, Britain did not predict the responses by the three Argentine generals when it blocked the sale, and the Argentine

generals did not predict how Britain would respond to its military occupation of the islands. Accurate forecasting of the other party's decisions might have led to a superior solution.

Role playing has been used to forecast the outcomes of many important conflicts. For example, Halberstam (1973, pp. 558-560) describes the use of role playing by high-ranking officers in the United States military to test the strategy of bombing North Vietnam. They found that a limited bombing strategy would fail to achieve the U.S. military objectives, that unlimited bombing had some military advantages, but that, overall, bombing would be inferior to a noBbombing strategy. Despite this, the U.S. president and his advisers decided that the best strategy was limited bombing. As role playing predicted, the strategy failed.

WHY ROLE PLAYING CAN IMPROVE ACCURACY

The roles that people play affect their behavior. In an experiment by Cyert, March and Starbuck (1961), subjects presented with the same data made substantially different forecasts depending on whether they were given the role of "cost analyst" or "market analyst." This study was extended by Statman and Tyebjee (1985), with similar findings.

Decisions are difficult to forecast when there are a series of actions and reactions by the parties involved. For example, given that party A proposes changes in a negotiation, one must predict party B=s initial reaction, A=s subsequent reaction, B=s subsequent reaction, and so on until they reach a final decision. The uncertainty about each party=s actions and reactions at each stage makes it difficult to forecast decisions. Role playing should be advantageous because it simulates the interactions.

BASIC ELEMENTS OF ROLE PLAYING

To employ role playing, a forecaster asks subjects to put themselves in specified roles and then to either imagine how they would act, act out their responses alone, or interact with others in the situation. The forecaster should try to match the decision-making situation as closely as possible, aiming for realism in casting, role-instructions, situation description, and session administration. I discuss each of these topics along with coding of the results and determining the number of sessions needed.

Realistic Casting

X **Those playing roles should be somewhat similar to the people they represent.**

Similarity of background, attitudes, and objectives would seem to be important. However, the little evidence available suggests that casting is not critical. For example, researchers using students have described their results as realistic (e.g., Zimbardo's, 1972, role playing of inmates and jailers). Mandel's (1977) review of research on political role playing led him to conclude that researchers obtained similar results whether they used experts or novices. In related research, Ashton and Krammer (1980) found considerable similarities between students and non-students in studies on decision-making processes. My advice on casting, then, is to obtain similar subjects if the cost is low; otherwise, obtain somewhat similar subjects.

The number of subjects on role-playing teams should correspond to the number in the actual situation. If this is not known, using more than one person to represent each party may help to reinforce the roles and encourage improvisation. Most of the research to date has used two individuals to represent each group.

Role Instructions

X **Describe their roles to subjects before they read the situation description.**

Roles affect subjects' perceptions of a situation. Babcock et al. (1995) had 47 pairs of subjects read their role instructions *before* reading the description of a law case and 47 pairs that read their roles afterward. The subsequent role-playing outcomes differed between these two groups.

X **Ask the role players to act as they themselves would act given the role and the situation, or ask them to act as they believe the persons they represent would act.**

It is not clear if it is best to ask players to act as they would act or as they think the actual decision maker would act. As Kipper and Har-Even (1984) show, this orientation of the role players can lead to substantial differences in outcomes, which could affect predictive accuracy. We need further research. Lacking such research, my advice is to run some sessions asking subjects to act as they would act in the given situation and some sessions asking them to act as they think the decision maker would. To the extent that the forecasts differ, one should have less confidence in the results.

X **Instruct players to improvise but to remain within their roles.**

Subjects should play their roles in a realistic manner and they should interact in a way that would be representative of the likely types of interactions. The advice to improvise is provided so that the role-players will stay in their role and so that they will explore different options. It is based on common sense and experience.

Description of the Situation

X **Describe the situation accurately, comprehensively, and briefly.**

Role-players need comprehensive and accurate information. The descriptions should include information about each of the participants and their goals, a history of their relationships, current positions, expectations about future relationships, the nature of the interaction, and the particular issue to be decided. However, role-players will not be able to retain much information. Thus, short descriptions of about a page are desirable.

Preparation of the situation description requires a good understanding of the situation and much care and effort. One should pretest the written description to make sure it is understandable and comprehensive. How the situation is described may affect the responses in unintended ways. For example, emotionally charged words may cause a bias. Thus, it may be worthwhile for collaborating researchers to prepare descriptions of the situation independently. The subjects could then be divided into groups, each receiving a different description of the situation. One could then compare the responses for the different descriptions.

X **Specify possible decisions for the role players when feasible.**

Having role players choose among specified possible decisions will make coding results easier. If the decisions are not obvious, one should leave the choice open to avoid overlooking a possible decision.

X **Provide realistic surroundings.**

To provide realism, one might ask participants to dress appropriately, as Janis and Mann (1965) did for a role-play between doctor and patient. One might use a realistic location, as Zimbardo (1972) did for a prison simulation. In each of these studies the subjects became emotionally involved.

Administration

X **Ask participants to act out their responses.**

Merely thinking about what one would do lacks realism. Active role playing (by talking or writing) is more representative of the behavior to be predicted. Greenwood (1983), after reviewing studies on role playing in psychology, reached the same conclusion on the need for active involvement.

X **Ask subjects to interact in a way that matches the actual decision-making situation.**

When several people or groups play roles, the participants within each group should discuss how they will act out their roles before meeting with the other party. This can help them to make their role playing realistic.

In some cases, one might ask a subject to read a role and then make decisions in response to some stimulus materials. In other cases, two groups of subjects might conduct face-to-face meetings. In still other cases, groups might exchange information about their actions via computer.

Some researchers have taken elaborate steps to achieve realism. Moynihan (1987) describes a role-playing procedure that lasted eight weeks. Mandel (1977) claimed that the Pentagon spent large sums for a role-playing session. However, inexpensive approaches to realism seem adequate. Elstein, Shulman and Sprafka (1978) compared elaborate versus simple role plays of doctor-patient interactions and found few differences between them. While elaborate simulations can achieve more realism, we have little evidence that there is a gain in accuracy that justifies their added cost. The budget is probably better spent by running more low-cost role plays.

Coding

The decisions from sessions are used as the prediction. For example, if managements= offer to a union leads to a strike in four out of five role-playing sessions, one would predict an 80 percent chance of a strike.

X **To reduce chances for misinterpretation, ask role players to write their view of the decision.**

Ask all role-players to report their final decisions independently. This is done in case the decision is perceived differently by each party. This can help to identify cases where the decision is ambiguous. In some cases such as agreeing to a contract, the reporting is simple. Sometimes, however, the role players will not reach a conclusion. In such cases, ask participants to write down what they think the decision would have been had the interactions continued.

X **If interpretation of the decision is required, have more than one person independently code the responses.**

Using more than one coder increases reliability. The coders should not be aware of the purposes of the study and should work independently. This principle is based on standard research methodology. Videotaped role-playing sessions may be useful in such cases and would also allow for coding of the interactions so that one can better understand how the decisions were reached.

Number of Sessions

X **Base predictions on results from a number of role-playing sessions.**

Each role-playing session can provide the forecaster with one sample observation per group. Thus, a role-playing session with two parties would yield two forecasts. They would be highly correlated. They would differ only if their perceptions on the decision differed or if they had to project what the decision would have been had the role play proceeded to a conclusion. To obtain a reliable prediction, one would want to have a number of decisions, each based on a different group. To obtain a valid prediction, one would also want to vary key elements of the role play.

To obtain reliable and valid forecasts, I think that one should run about ten sessions, five using one description and five using another. If the responses differ greatly across groups, then run more sessions. If the decisions are sensitive to the description or to other aspects of the administration, then create additional descriptions and run more sessions using them.

CONDITIONS FAVORING THE USE OF ROLE PLAYING

X **Role playing is more effective for situations in which a few parties interact than for those in which no parties or many parties interact.**

Role playing may be used in predicting decisions by an individual who does not interact with others directly. However, we can expect active role playing to be most effective (relative to other methods) for situations in which two parties interact. This is because realistic active role playing provides a simulation of the situation, and because experts who do not have benefit of the interaction will have difficulty in thinking through the interactions.

It is easiest to mimic situations in which only two parties interact. Where many parties represent different viewpoints, matching the role play to the situation is difficult. Starting in 1908, Washington and Lee University ran mock political conventions to select a presidential candidate for the party that was not in office. In effect, this was a complex role play with people representing many states, interest groups, and politicians. W&L=s convention was usually held two or three months prior to the actual convention. Through 1984, the convention correctly predicted 13 of 18 candidates. (During this period, it was common that the candidate was not selected prior to the national convention.) Public opinion polls had been conducted since 1936, and the candidate who was leading in the poll conducted at about the same time as the Washington and Lee convention won the nomination on eight of 12 occasions. During this period, the convention was also correct on eight of 12 occasions. Thus, role playing offered no advantage over surveys in this situation involving many parties.

X **Role playing is useful when the interacting parties are in conflict.**

In their study of price negotiations over the price of a car and the price for a company, Carroll et al. (1988) concluded that decisions often deviated from normative logic. Experts are probably better at identifying what *should* happen than what *will* happen. Role playing should be more accurate as to what will happen.

In many conflicts, the parties have opposing objectives or differing strategies. Differences in objectives occur, for example, when the seller is trying to get a high price for a product while the buyer seeks a low price. An example in which groups have similar objectives but pursue different strategies is to be found among those trying to reduce teen pregnancies: some want the state to provide free condoms while others advocate ending government support for teenage mothers.

X **Role playing is useful for predicting in situations involving large changes.**

Experts have difficulty predicting decisions when there are large changes or unusual events, because the changes are outside their experience. Given its greater realism, role playing=s accuracy should be superior to the expert’s judgment in such cases.

EVIDENCE ON THE VALUE OF ROLE PLAYING

To find published evidence on role playing, I examined the *Social Science Citation Index* from 1978 through early 2000. The search used various combinations of the words “role play” and “role playing” along with “forecast,” “forecasting,” “predict,” “predicting, and “prediction.” I also contacted researchers who had done related work. The latter approach proved to be much more fruitful.

Although role playing is widely used in the legal profession, Gerbasi et al. (1977) concluded that its accuracy has not been evaluated. My search led to the same conclusion. Similarly, despite widespread use of role playing in psychology, little has been done to assess its predictive validity, as noted in reviews by Kerr et al. (1979) and Greenwood (1983). Nevertheless, some evidence about its validity exists, as shown below.

Face Validity

Some studies attest to the face validity of role playing. Orne et al. (1968) found that observers could not distinguish between subjects who were hypnotized and those who were role playing a hypnotic trance. Zimbardo's (1972) simulation of a prison was so realistic that it was terminated prematurely for fear one of those playing a “jailer” might harm a “prisoner.” Janis and Mann's (1965) role play between “doctors” and “patients who were smokers” led to emotional responses by the subjects and to long-term reductions in smoking.

Predictive Validity: Procedures

Analysts could compare role playing and alternate methods in contrived or actual situations. Actual situations provide higher external validity, but the controls are fewer and the costs higher. Contrived situations, such as laboratory experiments, may have less relevance to the real world, although Locke (1986) reports a close correspondence between the findings from field studies and those from laboratory studies.

Evidence from prospective studies (i.e., situations whose outcomes are not yet known) are useful. However, most research has involved Aretrospective@ studies. Such studies are problematic because, even when it is possible to disguise past events, researchers may choose interesting situations that would be surprising to experts. In other words, the selection of situations may be biased toward those where expert opinions provide poor forecasts.

One key issue is how accurate role playing is in comparison with alternate methods. Most of the research to date has compared role playing with expert opinion, and some research has compared it to experimentation. Other procedures, described here, might also be considered.

Expert opinion: People with experience in similar situations can probably make useful predictions. For example, Avis executives can probably forecast decisions by Hertz executives. Expert opinion is especially useful in predicting when the changes are within the experts= experience, which implies that it is useful for predicting for small changes. Rowe and Wright (2001) discuss the use of expert opinions for forecasting.

Experimentation. The key features of a situation might be translated into a laboratory experiment. Laboratory experiments are common in marketing research. For example, people are asked to shop in simulated stores. Economists also use experiments to study problems. One can use field experiments in analogous situations, such as experimenting with a plan to charge customers for each trash bag in a few cities before extending the program to other cities. Field experiments are often used in marketing to predict the likely adoption of new products by testing them in certain geographical areas. The disadvantages of field experiments are that there is a loss of secrecy, expenses are high, and people may act differently during the experiments than they would in a real situation.

Intentions surveys: One possibility is to ask participants what decisions they will make in a given situation. Besides having information about the environment, participants may understand their own motivations. On the negative side, participants may lack insight about how they (and others) would decide, especially when faced with large changes. Also, they may be unwilling to reveal their true intentions in socially delicate situations. Morwitz (2001) discusses intentions as a predictive tool.

Extrapolation by analogies: By examining analogous situations, one may be able to predict for a new situation. For example, the issue of fluoridation of water supplies has led to conflict in various communities, so the outcome of a new case could be predicted by examining similar cases (e.g., 'In what percentage of similar cases did the community vote against fluoridation?'). Analysts can extrapolate from analogous situations to assess alternate strategies, but they need many similar cases to draw upon. This method is not useful for large environmental changes, new strategies, or new situations.

Game theory. The analyst would need to translate information about actual situations into a game theory framework. It could be difficult to obtain enough information to create a good match between the game and the actual situation. Also, despite much work on game theory, its predictive validity has not been tested. For example, in their book about game theory, Brandenburger and Nalebuff (1996) discussed its virtues for understanding business situations, but did report any studies of predictive validity nor were they aware of any (personal communication with Brandenburger 1997). I have tried to find such studies but have been unsuccessful.

Predictive Validity: Contrived Situations

Kerr et al. (1977) compared decisions by real and mock juries in a contrived situation. They led the “real” jurors to believe that their verdicts would be used to determine an academic violation at a university. On a predeliberation questionnaire (in their roles as jurors, but before they deliberated in a jury), about half of the 117 mock jurors (who realized that their verdict would not be used) reported that the defendant was guilty. For six-person juries, assuming the

initial majority prevails, this means that about half of the juries would reach a guilty verdict. However, none of the mock juries reached a guilty verdict. This was similar to the “real” juries where only one in 12 reached a guilty verdict.

In the late 1960s and early 1970s, role playing was proposed as an alternative to psychology experiments, largely in response to a concern about the deception of subjects. I reviewed the literature and found seven studies that used active role playing in an effort to replicate subjects= decision making in classic experiments on blind obedience, conformity, bargaining, attitude change, and affiliation. Typically, the subjects were placed in settings similar to those used for the experiments. They were asked to adopt the role of a subject and to imagine that this was a real experiment as they responded to a script. In six studies, the results of the role play were similar to those in the published experiment (Greenberg 1967, Horowitz and Rothschild 1970, Houston and Holmes 1975, Mixon 1972, O=Leary 1970, and Willis and Willis 1970). Holmes and Bennett (1974) was the only study that produced substantially different results.

Mixon (1972) provided explicit comparisons to alternatives. He used active role playing (i.e., with interactions played out) to predict obedience in Milgram=s (1974) study in which subjects were asked to shock a Alearner.@ In Milgram=s experiment, 65 percent of the experimental subjects were completely obedient and the average shock they administered was 405 volts (maximum was 450 volts). Of Mixon=s 30 role players, 80 percent were fully obedient and the average shock level was 421 volts. In contrast, when Milgram had asked 14 psychology students for their expert opinions on the percentage of people who would be fully obedient, they had estimated only one percent.

Predictive Validity: Actual Situations

I, along with research assistants, have conducted a series of studies on role playing. Typically, subjects were scheduled in two groups of two people each for 80-minute sessions. Upon arrival at the testing site, they were randomly paired and told that they would face a decision-making situation. They handled one situation as experts and another situation as role players. The order in which the situations were presented was varied across sessions. The situations were assigned randomly to call for either opinions or role playing. In each of these two situations, they received a set of closed-ended questions designed to cover the range of possible decisions.

In the expert-opinion sessions, subjects were told that they had all relevant information and that they had to reach consensus about the decisions. For each item on the questionnaire, they were to choose the response that most closely matched their prediction of the decision that would be made.

In the role-playing sessions, subjects in each pair were randomly assigned to the roles of one of the parties in a conflict (e.g., they could be players in the National Football League). The background information they read was intended to make the situation sound realistic and to get them to think about the problem from the perspective of their role.

After reading and preparing for 20 minutes, two pairs of adversaries met at a conference table. They were given information about the setting. For example, in the Philco Distribution situation, the role players were told they were meeting at the supermarket chain=s headquarters. For the Dutch Artists situation, the meeting was held "in the museum where the artists were conducting a sit-in."

The role-plays lasted until the adversaries reached consensus (which is what generally happened) or the time ran out. At the end of the role-play, the two pairs separated and each individual answered questions based on their experience. They were instructed to state the consensus as they saw it, or if they had reached no consensus, to state what they thought would have happened if their meeting had been allowed to run to a conclusion.

Role Playing Without Interactions Among Parties: In Armstrong (1977), I asked subjects to play the roles of seven members of the board of directors of the Upjohn Corporation. They were confronted with a recommendation from the U.S. Food and Drug Administration (FDA) that Upjohn=s drug Panalba be removed from the market. This recommendation was based on a 20-year study by an unbiased group of medical scientists who made a unanimous decision. The board met without representatives from the FDA. They had 45 minutes to agree on one of the following five decisions: (1) recall Panalba immediately and destroy; (2) stop production of Panalba immediately, but allow what=s been made to be sold; (3) stop all advertising and promotion of Panalba, but provide it for those doctors who request it; (4) continue efforts to market Panalba most effectively until sale is actually banned; and (5) continue efforts to market Panalba most effectively and take legal, political, and other necessary actions to prevent the authorities from banning Panalba.

I continued to run such role-playing sessions after 1977. In all, sessions were conducted in 12 countries over a 17-year period through 1988. Of the 83 groups in the condition designed to match that faced by Upjohn, none decided to remove the drug from the market. Furthermore, 76 percent decided to take decision 5, which was the decision that Upjohn actually chose. In contrast, when I asked 64 people (mostly economists) to predict the outcome, only 34 percent predicted that Upjohn would take that decision.

Clearly the roles affected decisions. When asked what they would do as individuals (with no assigned role), only two percent of 71 respondents to a questionnaire said they would continue efforts to market Panalba (decision 5). When Brief et al. (1991) presented this case to 44 individuals and asked them to adopt the role of a board member and to submit their vote for a meeting that they could not attend, 39 percent said they would remove the drug from the market. However, when his subjects played the roles of board members, none of the boards opted for removal.

Role Playing with Interactions: Most evidence on the use of interactive role playing to predict decisions comes from retrospective studies. The researchers disguised the situations so that subjects would not be influenced by knowing what actually happened, but did not alter any key elements in the conflict. As a check, subjects were asked if they could identify the situation, and none could. In this section, I describe studies conducted in Armstrong (1987) and Armstrong and Hutcherson (1989).

The “Distribution Plan” describes a 1961 plan by the Philco Corporation to sell major appliances through a supermarket chain. Customers at participating supermarkets could obtain a discount on their monthly installment payment for an appliance equal to five percent of the total of their cash register tapes. The payment of the discount was to be split between Philco and the supermarket. Philco wanted to predict whether a supermarket would accept the proposed plan. Subjects faced three decision options: accept the plan, accept a limited version of the plan, or reject the plan. In the role playing, the supermarket representatives accepted the plan 75 percent of the time, while only three percent of the subjects providing expert opinions predicted that the supermarket would accept the offer. In fact, the supermarket chain had accepted the offer. (It turned out to be an ill-fated relationship, but that is another story.)

The “Dutch Artists” study is based on a situation the Netherlands government faced. Artists staged a sit-in at the country=s major art museum in an effort to obtain government support for artists who were unable to sell their work. Subjects had to chose from among six possible decisions. In 29 percent of the role-playing sessions the government gave into the demands (the actual decision), whereas only three percent of the expert opinions predicted this.

In the “Journal Royalties” case, a new journal was an academic and financial success. The editors, however, were unable to cover their expenses out of the royalties granted to them under the initial contract with the publisher. They believed that the publisher was earning substantial profits. Furthermore, the editors were not satisfied with either the publisher's level of service or its marketing efforts for the journal. The initial contract ran out, and the editors had to negotiate a new contract with the publisher. The publisher's negotiators said that they could not offer higher royalties because they had to recover the start-up costs incurred during the first three years of the journal. Subjects were presented with four possible decisions. Role players were unable to reach agreement (the actual outcome) in 42 percent of the sessions, whereas only 12 percent of the 25 experts predicted such an outcome. Although neither approach was correct most of the time, role playing would have given greater weight to the possibility of not reaching an agreement. In fact, I was one of the negotiators, and like my other “experts,” my confident expert opinion was that we would reach an agreement. Unfortunately, we did not use role playing prior to the actual negotiation. The failure to reach an agreement was detrimental to both sides.

A prospective study, “NFL Football,” describes the conflict faced by the National Football League's (NFL) Players Association and the owners of the teams. We based our description of the conflict on reports published on February 1, 1982, when no negotiations had taken place. The existing contract was scheduled to expire in July 1982. The NFL Players Association said they would demand 55 percent of the football clubs' gross revenue to be used for players' wages, bonuses, pensions, and benefits. Subjects could chose among three decisions. Role playing led to a strike 60 percent of the time. In contrast, only 27 percent of the expert subjects predicted such an outcome. An insurance company was issuing policies based on its much lower probability estimate of a strike. As it turned out, there was a strike. Fortunately, my prediction that there would be a strike had been published in the *Philadelphia Inquirer* on July 8, 1982, well before the strike occurred.

Summary of Comparative Studies on Actual Decisions: In each of the five situations, role playing was more accurate than alternate methods for predicting decisions (Table 1). Role playing was accurate for 56 percent of the forecasts while opinions were accurate for only 16 percent. Predictions based on opinions did no better than selecting arbitrarily from the listed options.

Table 1
Accuracy of Role Playing vs. Expert Opinions for Actual Cases

		Percent Correct (Number of Predictions)		
Situation	**Parties in Conflict**	**Chance**	**Opinions**	**Role Play**
No Interaction				
Panalba (drug)	Manufacturer vs. government regulators	20	34 (64)	76 (83)
Interaction				
Retrospective				
Distribution Plan	Manufacturer & retailer	33	3 (37)	75 (12)
Dutch Artists	Artists & government	17	3 (31)	29 (14)
Journal Royalties	Publisher & editors	25	12 (25)	42 (24)
Prospective				
NFL Football	Players & owners	33	27 (15)	60 (10)
	Averages (unweighted)	**25**	**16 (172)**	**56 (143)**

Might the improved accuracy of role playing be due to subjects simply knowing about the roles? That is, does one need to role play the situation? To test this, I gave role descriptions to 48 pairs of subjects in the opinions conditions for the "Distribution Plan" and "Dutch Artists" situations. I asked subjects to discuss the situations from the perspective of the decision makers described in the role materials and then to predict what would happen. Their opinions were almost identical to those of groups that had received no information about the roles (Armstrong 1987). Thus, the superiority of role playing over expert opinions in these two situations was due to the interactions, not to information about the roles.

Role Playing to Predict Outcomes

I have focused to this point on forecasting decisions. Some studies have examined the use of role playing to predict outcomes of decisions. Role playing produced more accurate predictions than other procedures in three studies.

Tamblyn et al. (1994) used role playing by trainee doctors to predict ability to communicate with patients. They based their predictions on the trainees' interviews with five "standardized patients" who followed a script. Their resulting predictions of patient satisfaction had validity for a situation in which faculty ratings and self-ratings had proven to be ineffective.

Borman (1982) recorded 16 experienced recruiter=s assessments of 57 soldiers entering a U.S. Army recruiting school. Predictions based on first impressions were uncorrelated with success in training (average r = .02). Scores of tests designed to predict success in military recruiting were also poorly correlated with success (average r = .09), as were structured interviews (average r = .11). In contrast, each of five role-playing exercises was correlated to the three criteria in the expected direction (with one exception) in the 15 tests; over half of the correlations were significant at .05, and the average correlation coefficient was .27.

Randall, Cooke and Smith (1985) used role playing to predict the short-term (six months) success of people who had been hired recently as life insurance sales agents. The role plays were evaluated independently by four assessors and by a predictive model based on actual outcomes for 36 participants. The model, using two key inputs from the role play, was used to predict success for a holdout sample of 24 newly hired sales agents, of whom 14 were no longer employed after the six months. The model correctly predicted outcomes for 79 percent of the not-employed agents and 80 percent

of the employed agents. This was impressive given that the company had previously used extensive screening and prediction procedures in hiring these 24 salespeople.

IMPLICATIONS FOR PRACTITIONERS

The evidence supports the use of role playing. In comparison with expert opinions, it provides greater accuracy. While role playing is more expensive than the use of expert opinions, it would typically be much cheaper than experiments. Furthermore, some situations do not lend themselves to experimentation. Decision makers can use role playing to test new strategies that they have not previously encountered. Also, if outcomes are not pre-specified, role players might identify outcomes that experts did not consider.

Besides providing accurate forecasts, role playing can enhance understanding of the situation. Experts often face difficulties in gaining perspective on each of the parties in a conflict. In such cases, people often assume that others will respond as they themselves do (Messe and Sivacek 1979). A lack of perspective would be especially likely when the expert is a party in a conflict. For example, Nestle did not seem to understand the perspective of the protest group, INFACT, when it objected to Nestle=s marketing practices for an infant formula in third-world countries (Hartley 1989). Another example was Coca Cola=s failure to anticipate the reactions of a substantial group of Coke consumers to its revised formula (Hartley 1989). Governments are frequently surprised by the reactions of their citizens for such things as changes in the tax laws. Role playing can provide participants with information about how they feel about others' actions and how others react to their actions. A party in a conflict would have difficulty thinking through these cycles of action and reaction.

Role playing has been used to make predictions in the military; Goldhamer and Speier (1959) reported that Germany used it in 1929 to plan war strategy. It has been used commercially for jury trials as described by Cooper (1977). Leeds and Burroughs (1997) report its use for personnel selection. Kadden et al. (1992) had subjects respond (on tape) to tape-recorded descriptions of various social situations in which drinking alcohol was portrayed negatively; Their responses helped to predict reductions in the urge to drink in follow-up studies over the following two years. Busch (1961) described a role-playing procedure used by the executives of Lockheed Corporation to forecast reactions of their major customers to proposed changes in the design of its airplanes; this procedure allowed Lockheed to experiment with various options before actually making them available to the airlines.

IMPLICATIONS FOR RESEARCHERS

Little research has been done on the various procedures for conducting role-playing sessions. In particular, we do not know whether it is best to ask role players to "act as you would act in this situation" or to "act as you think the person you represent would act."

To date, role playing has been more accurate than alternate procedures, in particular when compared with expert opinions. However, research is needed to test the reliability and validity of the findings. Under what conditions is role playing most effective? In addition, it should be compared with intentions studies, the use of analogies, and experiments.

Comparisons of role playing and game theory would be especially useful. No direct evidence exists to compare their accuracy. I suspect that game theorists will have difficulty in matching situations, and as a result, game theory would prove to be less accurate than role playing. It would be interesting to compare the predictive abilities of role playing and game theory in conflict situations. I have presented this challenge to some game theorists, but have been unable to find any who are willing to participate in a comparative study.

SUMMARY

Role playing is the preferred method for predicting decisions in situations in which parties interact. It is especially useful when two parties interact, they are in conflict, the conflicts involve large changes, and little information exists about similar events in the past.

In trying to forecast the outcome of a decision-making situation, the analyst should ensure that the role playing matches the actual situation. This analyst should aim for realism in: casting, role instructions, descriptions of the situation, administrative procedures, and interaction among groups. Next to experimentation, role playing can provide the most realistic representation of interactions among different parties. It can be viewed as a low-cost and confidential alternative to experimentation. Role playing produced outcomes that were similar to those from seven out of eight experiments.

Evidence from five actual situations showed that role playing was more accurate than expert opinions for predicting decision-making when there were conflicts between groups and when large changes were involved. Role playing produced correct predictions for 56 percent of the situations versus about 16 percent for opinions. Finally, role playing provided better predictions than traditional methods in studies to predict the success of doctors, military recruiters, and life insurance sales people.

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