A Psychological Look into The Fear of Vaccines

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Abstract

In 1988 Baron and Hershey displayed that decision evaluation is dependent on the success or failure of a decision. Specifically, their experiment revealed that, when judges were asked to make an impression on the quality of a decision, the outcome of a decision was seen to cause a significant effect on the judgment quality of the decision. In addition, dFischhoff, 1975). Including social status into the argument of outcome bias due to the egocentric nature of humans’ evaluation of one another was also seen to significantly impact the decision evaluation process (Epley, 2004). Social status is understood as an individual’s level of experience within a field and their level of competence in that particular field. It has been shown that social status can lead to individuals being judged more harshly for making a bad decision (Sherman, 1970). Social status and decision-making are interesting because we hypothesize that as an individual’s decisions are being judged according to the outcome of a decision, in association with the actor’s social status, will hypothetically directly impact a judge’s evaluation of the quality of a decision. Subsequently, we will be doing two studies to attempt to display the link between outcome bias and its link to social status while in Study 2, we will be addressing outcome bias and social status in correlation with conformity to authority. Throughout the multitude of studies on outcome bias, there have been many identified variables to how outcome bias can be controlled.

Introduction

Outcome bias has been empirically supported in a multitude of studies. Specifically, we have found that outcome bias plays a direct role in the way in which individuals evaluate others’ decisions and the decisions made that lead to an outcome (Marchettie, 2019). Additionally, in another experiment done by Fischoff the participants were asked to evaluate the optional results of a conflict between the British and the Mongols. Half of the participants were given a sentence at the end of the prompt telling the outcome of the conflict while the other half were not given this information. The participants were asked to give a percentage chance for four different outcomes with a total of 100% between the four outcomes. It was observed that the individuals with the known outcome were significantly more likely to display a bias when evaluating the potential outcomes of the given scenario (Fischoff, 1975). Outcome bias has also been seen as having implications regarding the operations of the United States Justice System, various companies, and the United States military. Specifically, outcome bias could influence the ways the system provides juries as much information on why a defendant made specific decisions at specific times. The research and implications of the research of outcome bias have led toward steps in the ways that companies evaluate their employees and how punishments are carried out within the military. Accordingly, research in the field of outcome bias is relevant to have fairer rulings within our society’s organizations and for the employees working within the systems.

While the body of research concerning outcome bias is important, there is also a growing need for hindsight bias research. Research into the field of hindsight bias intruded the field of Psychology to how we evaluate our decisions via the severity of the outcome and the situation in which the decision is being made (Mitchell, 1981). Hindsight bias is observed when judges are asked to evaluate an individual’s decision. Specifically, if the judge knows the outcome of a decision, then they will inherently believe that the outcome was naturally the most likely outcome. However, hindsight bias also has a controlling factor regarding judges' own egocentrically based analysis of an individual’s actions and how that will always be different from another judge because all of the individuals’ actions are being judged on a different basis: the judges own experiences (Arkes, 2013).

From the culmination of information that was presented in these past studies, we have generated a question of what role outcome bias plays in a situation in which a reputable, high social status, individual is being judged versus a less well regarded, lower social status, individual, and how the quality of their decision will be judged. The proceeding experiment will see manipulation of available information given to the participants about an individual who is in need of a medical operation. Our independent variable will be a doctor’s socioeconomic position and how their statues will impact the subjects rating of the quality of the doctors’ decision. We hypothesize that the higher social status doctor will be judged more harshly than the lower social status doctor because they will be seen as being more competent in their field which in turn should mean that when they are seen making a mistake then they will be judged more harshly than

their lower social status counterpart. Our objective is to gain a deeper understanding of why someone who is seen as a higher-class individual, doctor, is possibly going to be seen as having made more understandable or reasonable decisions when compared to a lower-class individual, the less known doctor.

Method

Participants.

In the current study, participants were acquired through a survey website, Qualtrics. This website ensured that our experiment had a gender distribution of optimally 50 males and 50 females, while also restricting the age of our participants between the ages of 18 and 65. Every participant was informed of their rights within the study via being introduced to the Human Research Consent form, see appendix section 1, at the beginning of the Qualtrics survey. In addition, each participant was informed that they could abandon the survey at any point and their results would not be used if they did not want them to be. Each participant was vaguely informed of the purpose of the experiment at the beginning of the survey, informed that the experiment was relevant to outcome bias and social status, and at the end of the survey via an in-depth explanation of outcome bias, social status, and how their results will be contributing to the field of decision evaluation analysis as a whole. The initial participation pool was a total of 56 participants; however, upon reviewing the participants' response time and answers t was discovered that 23 of the responses were not acceptable due to either very short completion times, measured from the beginning of the survey to the completion of the survey, or that their responses were too similar for every question in the survey, ranging from 2-point differences in their responses. All participants' responses that completed the survey in 100 or less seconds were also omitted from the data analysis. We also had one participant who did not want his or her responses to be used in the analysis of the study, which was respected, so their results were removed from the analysis.

Materials.

The current study was administered through the Qualtrics survey website. The vignettes were constructed in regards to a study conducted by Baron & Hershey, (1988). Specifically, outcome bias studies tend to administer vignettes, so to optimally provide an empirically supported vignette structure and to improve the reliability for the current study, vignettes of successfully portraying to our participants the situation in which a hypothetical doctor was in. We structured the vignettes on a 2 (outcome: success vs fail) $\times$ 3 (status type: known hospital, education level, payrate) $\times$ 2 (status level: high social status doctor vs low social status doctor) ANOVA of repeated measures design.

The vignettes were structured with the intent of displaying a hypothetical doctor with a specified dependent variable, such as their education level to display their social status and the independent variable of whether the outcome of a patient's operation was either a success or a failure. The reason for choosing the name of the hospital in which the doctor worked was done so as to display to the participant a very well-known hospital, The Mayo Hospital, in comparison to a "local state hospital" which would optimally display a kind of social status or competence of the hypothetical doctor. Also, the doctors pay was used as a variable because a higher paid doctor should be understood to be a higher social status individual in comparison to a lower paid doctor. The doctor's noted payment was determined by researching the average pay of a cardiovascular surgeon and then significantly increasing that amount for the higher social status doctor and significantly decreasing it for the lower status doctor.

Baron & Hershey, (1988) made minor adaptations so that the independent variable, doctors' social status, was made clear to the participants in each vignette. The patient's operation was a necessary operation that would improve their quality of life and it was a life-ordeath operation in that the patient needed the operation done; otherwise, they would inevitably die from their illness. The life-or-death situation was critical in previous research because it places a strong impact on the outcome of the situation that is being evaluated by the participants (Baron & Hershey, 1988). Accordingly, the vignette model provided ample information to the participants about the state in which the hypothetical patient was in and how the dependent variable of the doctor's social status was able to be made clear via using these vignettes. Lastly, the controls for the vignettes were

constructed via omitting the information of the doctor's social status and gave the participants the same information about the patient's state of being, in which they were dying from their illness, and whether the operation was a success or a failure.

The participants evaluated the quality of the hypothetical doctor's decision via a 60-point Likert scale that had 7 labels. Specifically, the 60 points ranged from -30 to 30 and had labels on each 10-point increment of the 60-point scale, see appendices tables section. The independent variable was the manipulation of the doctor's social status (doctors' income, hospital in which they worked, and doctor education level). The dependent variable was the success and failure of the procedure.

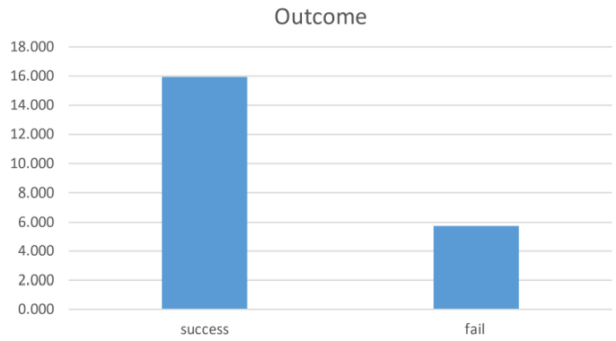
Procedure.

In the beginning of the survey, participants read the research consent form (see appendices) and agreed to participate in the survey. Following this, the participants read a short vague description of what the proceeding survey was about, informed that they were taking a survey about the connections between outcome bias and social status. Afterward, they began taking the survey being asked questions in order of dependent variable type with success then failure and closing the section with the control conditions before moving onto the next section of dependent variable with the same cycle occurring throughout the entire survey, see appendices section 2. Upon completing the survey, the participants were thoroughly debriefed on what the survey was about and given an in-depth explanation of what outcome bias and social status is. Lastly, they were asked one final time if they consent to their responses being analyzed for research in the field of decision evaluation. The approximant amount of time to complete survey was 5- 10 minutes, on average.

Results

In the data analysis, we identified three separate variables and their subsequent association to one another: outcome, status type, and status level. We used a 2 (outcome: success vs fail) × 3 (status type: known hospital, education level, payrate) × 2 (status level: high social status doctor vs low social status doctor) ANOVA of repeated measures in order to analyze the effects of each variable on one another. We used the P value .05 as a base line to determine whether or not a variable was significant or not. Status type, $F(2,62) = 0.80$, $P = .452$, $\eta 2 = 0.25$, was found to not hold a significant effect on the experiment as a whole. However, when addressing the estimated marginal means interaction between outcome, $F(1,31) = 22.209$, $p = 0.000$, $\eta 2 = 0.417$, and status level, $F(1,31) = 1.015$, $P= 0.32$, $\eta 2 = 0.032$, there was an interesting effect that occurred.

Specifically, outcome and status level saw a 12-point difference in their means. While this would indicate a non-significant interaction it would seem that there is a strong interaction occurring between status level and outcome. Our within-subject results displayed no significant effects of status type and outcome, $F(2,62) = .671$, $P= 0.52$, $\eta 2= .014$, or between status level and outcome, $F(1,32) = 1.217$, $P= 0.28$, $\eta 2= .038$. Additionally, status type and status level displayed a non-significant interaction, $F(2,62) = 2.395$, $P= 0.10$, $\eta 2 .179$. While the combination of all three variables revealed, $F(2,62) = 1.047$, $P= .036$, $h 2= .070$.



Discussion

The main effect of outcome was the only variable that was seen to be significant in the entire survey study. This is important because the outcome variable is seen to be significant, which only supports the understanding that outcome has a significant influence on how we evaluate others' decisions as displayed by Baron & Hershey, (1988) and their constituents. Specifically, outcome is seen to have a significant effect on decision evaluation because of the bias that exists when a judge is evaluating a decision, even though the actor that made the decision never could have known how whether the outcome would be a success or not.

While all but one of the analyses were not significant, there was an interesting interaction between each of the variables when comparing the estimated marginal means. Specifically, it was found that there were between 12 and 16 numeral differences between each variable's interaction. This would indicate that there was a differentiation between

each of the high and low status doctors; however, the interaction was not found to be significant. One could believe that with a larger and more interactive participant pool it could be possible to display a significant interaction between status level and outcome.

The status type variable did not have a significant effect on the experiment when analyzing the results holistically. It is possible that the primary reason for this was due to the construction of the vignettes. Specifically, the vignette structure was not diverse enough to trigger the desired effect of critical analysis by the participants which lead to quick responses. A possible fix to this would be to follow the study conducted by Baron & Hershey, (1988), in which diversity in their use of the vignettes was more closely related to promoting diversity in the questions to force the participants to read every prompt more closely. While the current study failed to display a strong connection between social status and outcome, the data shows that there is room for further research within this area.

While social status did not have a direct impact on outcome bias, one could believe that the primary reasons that this was due to our limited participant pool. However, the results did show that outcome was significant, below .05, which is concurrent with the larger body of research surrounding decision judging. We believe that this study provides a basic grounding opportunity for future studies, while our vignettes were not diverse enough, we were able to accurately use social status variables to observe a weak connection between outcome and social status. Running subsequent experiments that will capitalize on the success of this experiments ability to display a non-significant correlation between social status and outcome while also avoiding the failures on vignette construction and execution.

While there is a strong connection between outcome bias and social status type, these two variables simply need to be highlighted in a different experiment. One of the possible limitations to the vignettes in the current study could have been that they were surrounding the medical field, which could have caused some participants to have missed subtle important pieces of information. Lastly, we aim to further our hypothesis in further studies with the goal of proving that social status and outcome bias directly affect one another much like the research conducted by Fischhoff (1975), in which the correlation between hindsight bias and outcome bias was displayed to have significant effects on one another.

Experiment 2: Obedience and Decision Evaluation

Introduction

Study 2 sought to change the vignettes, removing the medical decision due to the possibility that it caused the participants of Study 1 some confusion when responding. Specifically, due to possible confusion from the formation and similarities of the vignettes in Study 1 that may have caused the results to have weak connections between the independent and dependent variables, the current study will focus on a new baseline topic from which the vignettes will be structured around. Accordingly, the current study uses basketball as the base topic upon which we will be building our vignette's around to avoid any possible confusion by the participants about the severity of the situation in which the actors in the vignette's may find themselves in. The study addresses the relation of the effects of outcome bias on obedience to authority (Sigelman, 1976), as opposed to outcome bias in correlation to social status. We hypothesize that the judged quality of a decision will be dependent on whether or not the actor conformed to the authority figures instructions, the basketball coach, and if the outcome was a success or a failure (Baron & Hershey, 1988).

Interestingly, this study will be capable of displaying how people feel about the quality of an actor's decision, even if it succeeded, but they did not conform to an authority figures order and vice versa. This is important because there has been a lack of studies that address this issue at heart but rather focus on an effect of outcome bias on decision evaluation (Baron & Hershey, 1988) or how an individual will conform under the pressure of an authority figure, (Gibson, 2017). Obedience is the key to this study in comparison to Study 1 because of the unique effects that it may introduce to the participants judging by the quality of an actor's decision. Specifically, obedience has been displayed to have a significant impact on how decisions are made in relation to how close the actor is to the authority figure, (Gibson, 2017). While the relationship of obeying an authority figure and distance between the authority figure and actor has already been displayed in multiple studies, it is important to determine the relationship between obeying an

authority figure and the outcome of obeying versus not obeying and its relationship to how decisions are evaluated. A prominent question that this study seeks to answer is how people feel about executive decisions that end up working versus not working even if they directly go against an authority figure directive.

Method

Participants.

For this survey, we used the Qualtrics survey website to get our participant pool of 45 participants. We aimed to have 50 participants, 25 male and 25 female; however, we ended up with a mix of genders for our participant pool, with 31 being male, 5 female, 8 unidentified, and one non-binary. Additionally, the survey restricted the age of our participants between 18 and 65 years old. Every participant was informed of their rights within the study via being introduced to the Human Research Consent form, see appendices, at the beginning of the Qualtrics survey. Each participant was informed that they could abandon the survey at any point and their results would not be used if they did not want them to be. Each participant was also informed of the purpose of the experiment at the beginning in a vague sense. Specifically, they were informed that the experiment was focused on outcome bias and obedience to authority, yet the participants were aware of more information at the end of the survey. In the data analysis for this experiment, participants who completed the survey in less than 100 seconds or did not completely finish the survey were excluded, which left us with a total of 35 viable participant responses to be analyzed.

Materials.

This survey used its own set of vignettes that displayed a basketball game that was in the closing moments of the match so as to create a high stress situation for our participants to judge, much like the Baron & Hershey (1988) used in study one. Specifically, the independent variable of whether the authority figure was present or not, the basketball coach, was a base for constructing the control of these vignettes. The control condition presented the same situation as the experimental questions; however, the presence of the coach was omitted so that these two conditions could be compared. In addition, the dependent variable that was used was a player's decision of whether they did pass the ball to their teammate or if they shot a long two point shot to try and win the game. Notably, this was meant to measure the quality of the point guard's decision in correlation to the outcome of their decision and whether the coach was giving an order to pass or if they were not present. Lastly, each vignette began with the statement that the point guard was bringing the ball down the court in the final moments of the basketball game, in which the team was down by a small margin that they could alter and possibly even win the game if the right decision was made.

For the data analysis a 2(outcome: success vs failure) $\times$ 2 (coach present vs. no coach present) $\times$ 2 (pass vs. no pass) ANOVA repeated measures design was used to determine the strength of the variables impact on one another. The participants were exposed to each set of variables in order of their variable set and control set (see appendices section two). Each participant was exposed to every question in the survey so that there was enough data for a within-subject analysis of variance. The participants evaluated the quality of the point guard's decisions via a 60-point Likert scale that had 7 labels. Specifically, the 60 points ranged from -30 to 30 and had labels on each 10-point increment of the 60-point scale, see appendices tables section.

Procedure.

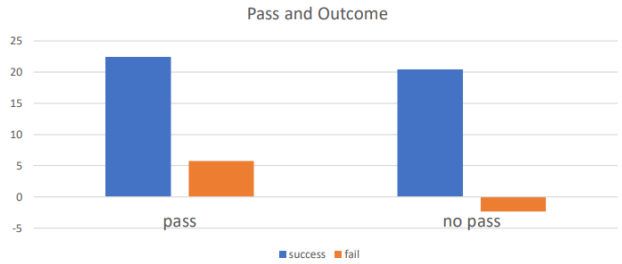
Upon starting the survey, each participant was informed of their rights as participants and that they had the right at any point to abandon the survey if they chose to. Additionally, each participant was made aware that they could request that their data not be used for the data analysis of this survey. Following this, the participants read a short, vague description of what the survey was seeking to gain data on; specifically, that the survey will be looking at the effects of obedience and outcome bias. After being informed of their rights, the participants were given a small amount of information about the role of the point guard player and the center player within a basketball setting. Proceeding the information about the duties of the players, the participants completed the survey in order of the variable set and control set that went with each variable set. Then they were debriefed via being given an in-depth explanation of what outcome bias and obedience is and how their data would be helping grow the field of research surrounding decision evaluation. Lastly, the participants were asked one final time if they consented to their results being used for data analysis. On average the survey took between 3-5 minutes to complete and submit, and they received no reward for completing the survey.

Results

A 2 (outcome: success vs fail) $\times$ 2 (obedience: coach vs no coach) $\times$ 2 (decision: pass vs no pass) ANOVA of repeated measures design was used in SPSS (Statistical Package for the Social Sciences) to analyze the participants' responses to the proposed vignettes. Outcome was significant with values of, $F(1,34) = .29.30$, $P = 0.00$, $\eta\ 2 = 0.46$. Additionally, Obedience was not seen to have a significant effect on

its own, F (1,34) = 0.20, P= 0.89, η 2 = .001. However, when observing obedience in association with the other variables many interesting effects are seen. Lastly, decision was found to hold a significant effect on its own, F (1,34) = 51.87, P = 0.00, η 2 = 0.60. When addressing the data of within-subjects contrasts, it was found that two of the four contrasts had significant effects on one another. For instance, when observing the within-subject contrast of the coach and pass, it was found that, F (1,34,) = 17.27, P = 0.00, η 2 = 0.34. When observing the within-subject contrast between the variables pass and outcome, it was found that, F (1,34) = 14.20, P = 0.001, η 2 = 0.30. Unfortunately, both within-subject contrasts of coach and outcome, F (1,34) = 1.07, P = 0.31, η 2 = .03, and the three way within-subject contrast of coach and pass and outcome, F (1,34) = 0.91, P = 3.46, η 2 = 0.03, were not found to have a significant effect. However, when observing the relationships between these variables, it was found that there were multiple significant effects in the estimated marginal means.

The outcomes marginal mean difference (success = 14.06: failure = 9.01) was seen to have a 5-point difference; the coach's marginal mean difference (present = 11.46: not present =11.61) was seen to not hold a significant difference on its own. However, there was a marginal mean difference of the pass variable (pass =21.40: no pass = 1.67). Interestingly, when observing these marginal means in association with one another there were some interesting interactions. Firstly, the marginal means of coach and pass (coach present and pass occurs= 23.54: coach present and no pass occurs = -0.61) was one of the two negative associations discovered in the study. The coach and outcome marginal means (coach present with successful outcome = 14.26: coach present with failure outcome = 8.67) was seen to hold a 1 -point difference, specifically 1.07, in whether the coach was present or not and if there was a success or failure (coach not present successful outcome = 13.87: coach not present with failure outcome = 9.36). In comparison, the estimated marginal means of pass and outcome (pass and successful outcome = 22.41: pass and failure outcome = 20.40) were seen to have a 6-point difference (no pass and successful outcome = 5.71: no pass and failure outcome = -2.37). Lastly, the authority, pass, and outcome marginal means (coach present and pass occurs with a successful outcome = 24.63: coach present and pass occurs with a failure outcome = 22.46) only ended up reaffirming the associations made between the previous estimated marginal means and displayed a 6-point difference in the weather the pass did or did not occur, specifically a 6.83 difference, (coach present and no pass occurs with a successful outcome = 3.89: coach present and no pass occurs with a failure outcome = -5.11). However, when the coach was not present in the three-way estimated marginal means (coach not present and pass occurs with a successful outcome = 20.20: coach not present and pass occurs with a failure outcome = 18.34) in association with weather the pass occurred or not (coach not present and no pass occurs with a successful outcome = 7.54: coach not present and no pass occurs with a failure outcome = 0.37) yielded a 5-point difference as to whether the pass occurred or did not occur and if there was a successful outcome or not.



Discussion

The results were overall supporting of the current hypothesis. After observing the data, it is evident that the effect of outcome is significant throughout every variable in the study and that the presence of the coach has a significant impact on how the quality of the point guard's decision is evaluated. Specifically, the understanding that if the authority figure gives a command and that command is followed but the outcome is a failure, then the judged quality of the decision is perceived as better than if the point guard did not listen and the outcome was a failure. One can assume that the reason for this is that people expect individuals to obey the authority figure and that if they do not and the subsequent outcome of that decision is a failure, then they are seen as directly disobeying and hurting the unit as a whole, due to their decision, (Sigelman, 1976).

While outcome was significant in every scenario, the interaction between outcome and pass displayed a curious interaction. When the outcome of a situation was successful and the player decided to pass, then there was a more positive evaluation compared to if the player did not decide to pass but the outcome was still a success. One could reason that this interaction occurred because people evaluate teamwork more highly than they would a single player making a risky play on his or her own. Conversely, when the player decided to pass and the outcome was a failure, the evaluation was seen to be significantly lower than if the outcome was a success; however, this is expected due to the understanding of outcome bias,

(Baron & Hershey, 1988). An interesting comparison is seen when observing if the outcome was a failure and the player did not decide to pass. Even though the evaluated quality of the player's decision in the pass failure situation was low when it is compared to the no pass failure situation, there is a large margin of evaluation points difference (see pass outcome graph above). Specifically, in the no pass failure situation, there is a negative evaluation of the players decision. One can assume that this evaluation occurs because the outcome was decided by a single player who did not work with the team to try and win the game and instead put all the weight on their own shoulders, which ended up failing. This data correlates with a multitude of studies on the evaluation of others' actions, (Servant, 2021) and has successfully displayed that decision evaluation can be heavily reliant upon whether an individual does or does not work alongside their constituents to accomplish or try to accomplish a task.

The current study also displayed an important interaction on the effect of authority and obedience. Specifically, in the situation that the coach was present in comparison to when the coach was not present in correlation with whether a pass did or did not occur displayed a negative interaction, (Gibson, 2017). Indeed, if the coach gave an order for the player to pass the ball and the pass did not occur, then there is a negative evaluation of the player's decision because he did not listen to what the coach instructed him to do. This is compared to the situation when the coach was present and the pass instruction was adhered to and the evaluation is rated very high. Additionally, in the situation that the coach was not present and the pass did occur in relationship to it not occurring was of interest due to the idea of a need for teamwork to have a possible effect on decision evaluation, (Mitchell, 1981). When removing the effect of the authority figure in this situation and solely observing the effect of whether a player worked with his or her teammates seems to display a tendency for judges to be more critical of actors who tried to do things alone in comparison to whether they worked as a team, (Sherman, 1970).

The present study was effective in displaying significant interactions between outcome bias and obedience to authority in a basketball setting; however, the study could be expanded upon by introducing a new vignette structure outside of a sports setting to create a less extreme situation, unlike the final moments of the basketball game. Indeed, by introducing a less extreme situation, it is possible that the quality of a judgment could be dependent on whether an actor decides to listen to an authority figure's instruction in relation to whether the outcome was a success or a failure. We want to see if it is possible to exit the extreme situation and enter into a less intense scenario to determine if the extreme situation dictates if the judged quality of a decision is dependent on the extreme situation or not. While the survey was a success in displaying the relationship between the variables, there is room for improvement in the study.

Specifically, it was noted by participants that there was some confusion on whether the center player in the vignettes was open or not, which could have drastically changed the participants' judged evaluation of the point guard's decision to not pass the ball. Additionally, there was room for improvement in the number of participants for this study to be more certain in our findings via increasing the participant pool. Lastly, this experiment could have been expanded upon by introducing more vignettes that have more variability while still being in the sports world. Specifically, presenting more kinds of sports situations that are in a heightened moment that could determine the success or loss of the game could provide a means of displaying the bias of a need to conform to an authority figure, even if the instruction does not lead to a successful outcome.

General Discussion

Throughout these two studies, we have successfully displayed that outcome bias exists in a vast array of situations but is easiest to display in situations of whether an outcome is a failure in comparison to when it is a success. In addition, the current studies show that this bias does not go away if an authority figure is present and helps when making a decision, or if an individual is a higher social status person, in the same field of work, or if they are a low social status person. The judged quality of a decision is still dependent on the outcome. In Study 1, there was not a significant relationship between whether an induvial that was understood to be more experienced in their field versus another individual that was less competent in the same field of work; thusly, one may want to do further research on whether social status does have an impact on how critically a decision is judged based off the weak connections that were displayed in Study 1. Notably, in future studies it may be best to avoid a hospital vignette due to the possible confusion that the participant pool may have experienced from not having enough foreknowledge on how doctors' statuses are displayed.

In Study 2, there was a success in displaying a significant effect between our variables and how these variable effects could be interpreted. Specifically, from the pass and coach present situation, when decisions are evaluated, it is best to play as a team via passing the ball, and it is even better to obey an authority figure's order to pass the ball. However, most notably, decisions are evaluated

negatively when not obeying a coach's order to pass the ball or opting to not pass the ball when the coach is not present at all. The pass and outcome results demonstrate that it is best to pass the ball and fail, rather than not passing the ball and failing. The largest takeaway from this study would be that operating as a unit whether an authority figure is present or not is best independent of a success or a failure outcome. Most importantly, these two studies have successfully been able to display that outcome bias works its way into all aspects of decision evaluation and has a significant impact on how we make our decisions.

It is important that the way in which we make our decisions and the factors that play a role in the ways that we make those decisions are analyzed and made clear to those that judge others. The application of this research is critical to being able to make our justice system and employee evaluations fairer for those being judged. It is studies like these two and the work of Baron & Hershey, (1988) that have been able to display how impactful outcome bias is on the way that people judge others' decisions. There is a need for more follow up studies on outcome bias to build an even more tangible body of research that can contribute to the U.S. court system, allowing practical applications of this research to be utilized.

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