

2010

# GPA and Attribute Framing Effects: Are Better Students More Sensitive or More Susceptible?

Ken Dunegan

Cleveland State University, k.dunegan@csuohio.edu

Follow this and additional works at: [https://engagedscholarship.csuohio.edu/bus\\_facpub](https://engagedscholarship.csuohio.edu/bus_facpub)

 Part of the [Organizational Behavior and Theory Commons](#)

**How does access to this work benefit you? Let us know!**

## *Publisher's Statement*

This is an Author's Accepted Manuscript of an article published in Journal of Education for Business, 2010, available online: <http://www.tandfonline.com/10.1080/08832320903449444>.

## Original Published Citation

Dunegan, K. (2010). GPA and Attribute Framing Effects: Are Better Students More Sensitive or More Susceptible? Journal of Education for Business, 85, pp. 239-247.

This Article is brought to you for free and open access by the Monte Ahuja College of Business at EngagedScholarship@CSU. It has been accepted for inclusion in Business Faculty Publications by an authorized administrator of EngagedScholarship@CSU. For more information, please contact [library.es@csuohio.edu](mailto:library.es@csuohio.edu).

# GPA and Attribute Framing Effects: Are Better Students More Sensitive or More Susceptible?

Ken Dunegan

*Cleveland State University, Cleveland, Ohio, USA*

Data from 2 studies show students differ in terms of how attribute framing alters perceptions and reactions in a decision-making episode. Using student GPA as a moderator, results from a role-play–decision-making exercise (Experiment 1) show perceptions and intended actions of higher GPA students were more strongly affected by attribute framing manipulations than were participants with lower GPAs. A second experiment helped explain these findings. Results from Experiment 2 suggest students with higher GPAs responded to the inferred meaning of framed messages; that is, they looked beyond the literal message to find the message intended.

**Keywords:** academic performance, attribute framing, decision-biases, grade point average

Although often maligned and frequently criticized for being inflated and overly subjective (Vickers, 2000), a student's GPA continues to be one of the most conspicuous items on a resume. GPA is widely accepted as an indicator of academic success (McAloon, 1994) and is routinely used by organizations in decisions about who to interview (Thoms, McMasters, Roberts, & Dombkowski, 1999), who to hire (Krzystofik & Fein, 1988; Roth & Bobko, 2000; Rynes, Orlitzky, & Bretz, 1997), and what level of compensation to offer (Carvajal et al., 2000).

Obviously, there are various reasons employers remain interested in GPA (for an excellent discussion, see Roth & Clarke, 1998). After all, GPA has been correlated with critical thinking skills (Bowles, 2000; Cheung, Rudowicz, Kwan, & Yue, 2002; Spaulding & Kleiner, 1992), cognitive abilities (Meyers, 1987), and general mental abilities (Jensen, 1980), and is often perceived as an indicator of motivation (Brown & Campion, 1994) and conscientiousness (Wolfe & Johnson, 1995). However, at the end of the day, employers believe the cognitive skills and motivation needed to succeed in school transfer into increased productive capacity on the job (Heinemann, 1996; Roth, BeVier, Switzer, & Schippmann, 1996; Wise, 1975).

Although GPA receives considerable attention in studies examining decisions made by employers, there is compara-

tively little research that looks at GPA as a diagnostic component in the decision-making processes of students. From an employer's standpoint, this is a curious oversight because decision making is one of those ubiquitous responsibilities present at all levels of an organization (Fagley & Miller, 1997). In fact, many feel decision making is the most important skill a manager can develop (Garvin & Roberto, 2001; Hammond, Keeny, & Raiffa, 1998).

Therefore, the purpose of the present study was to begin to address this limitation and examine the extent to which decision-making processes vary based on a student's GPA. Of particular interest was whether GPA might act as a moderator of an interesting decision making phenomenon called *framing effects*. Framing deals with the presentational style used to portray objectively equivalent information. For example, labeling beef 75% lean (positive frame) versus 25% fat (negative frame) presents objectively equivalent information framed in two different ways (Levin & Gaeth, 1988). In the decades since Tversky and Kahneman's (1981) seminal work, framing has garnered considerable research attention (for reviews, see Kühberger, 1998; Levin, Schneider, & Gaeth, 1998) because the effects of framing violate the tenets of expected utility theory and the rational theory of choice (Tversky & Kahneman, 1986). According to expected utility theory (Von Neumann & Morgenstern, 1944), presenting objectively equivalent information in a positive or negative manner should not affect the course of action chosen. In other words, a rational, objective decision maker views a glass half full as equal and interchangeable to a glass half empty. However, studies in the area of human judgment and decision making indicate that the choices people make frequently

---

Correspondence should be addressed to Ken Dunegan, Cleveland State University, Department of Management and Labor Relations, 2121 Euclid Avenue, BU 433, Cleveland, OH 44115-2214, USA. E-mail: k.dunegan@csuohio.edu

violate the precepts of expected utility theory, and that framing does indeed make a difference.

Recently, investigators have attempted to identify factors that might moderate framing effects. One line of study looks at the role of individual differences and the degree to which some people are more or less susceptible to framing (Fagley & Miller, 1997; Hazer & Highhouse, 1997). For example, Stanovich and West (1998) found that students with higher academic aptitude, as measured by SAT scores, were not as affected by framing as were students with lower academic aptitude. Several researchers in this line of inquiry have posited that framing effects may be the result of superficial examination of information, and that the choices made by individuals who are more conscientious and thorough are not as likely to be affected (Chatterjee, Heath, Milberg, & France, 2000; Smith & Levin, 1996). If this position has merit, and, because GPA has been linked to conscientiousness (Nguyen, Allen, & Fraccastoro, 2005), SAT scores (Wolfe & Johnson, 1995), and critical thinking (Cheung et al., 2002; Spaulding & Kleiner, 1992), then it might be expected that individuals with higher GPAs would be less susceptible to framing.

However, evidence supporting the position that a more thorough evaluation of information reduces framing effects has been inconclusive. For example, contrary to results reported in earlier studies, research by LeBoeuf and Shafir (2003) found that participants with a high need for cognition (NC; an individual difference measure associated with tendencies to engage in thorough information search and analysis; Cacioppo, Petty, & Kao, 1984) were just as susceptible to framing effects as participants with low NC. Similarly, Dunegan (2002) reported stronger (not weaker) framing effects for high-NC participants. However, the task used in Dunegan's study was of a particular type of framing manipulation, specifically, attribute framing.

Levin et al. (1998) suggested that there are at least three different types of framing manipulations: risky-choice framing, attribute framing, and goal framing. Risky-choice framing is the most common. In this type of framed event, participants choose between risky options in which the probability of a desirable or undesirable outcome is presented in a positive or negative way. The commonly used Asian Disease Problem is an example of risky choice framing.

Attribute framing involves manipulating the way characteristics of an object or event are presented. The aforementioned labeling of ground beef as 75% lean versus 25% fat (Levin & Gaeth, 1988) is an example of attribute framing.

Goal framing focuses an individual's attention on the benefits to be realized, or the losses that can be avoided, by adopting one behavior over another. In other words, goal framing manipulates the implied consequences of an action. Meyerowitz and Chaikaen's (1987) study of breast self-examination is an example of goal framing.

In studies using attribute-framing manipulations, the intent is to influence the relative attractiveness of an object or event by controlling the perspective used to view the

decision arena. Thus, labeling beef 75% lean creates a positive perspective, whereas a 25% fat label creates a less appealing perspective. Although there may be objective equivalence in the labels used in attribute framing manipulations, it may be that individuals who are sensitive to underlying subtlety and inferred meanings may actually be more susceptible to the effects of this type of framing. For example, Crawford and Skowronski (1998) found participants with higher NC scores identified and remembered more subtle themes integrated into information. However, as a result of this seemingly positive outcome, Crawford and Skowronski (1998) reported that high-NC participants exhibited a greater sensitivity to biasing effects than did participants with lower NC scores.

Building on this line of research, the purpose of the present study was to continue to explore whether individuals differ in their sensitivity to attribute framing. In particular, we were interested in whether GPA scores might moderate the influence of attribute framing effects and thereby produce relationships (a) employers could use in making their own decisions and (b) academicians could use in teaching students how to improve overall decision-making skills. We conducted two experiments to generate the data needed to examine this issue.

## EXPERIMENT 1

As mentioned previously, research already ties individual difference with framing effects. Unfortunately, the inconclusive findings in that research do not provide a clear basis for developing hypotheses. However, given the similarities between the present study and some of the previous research (e.g., Dunegan, 2002), we hypothesized that GPA and attribute framing manipulations would interact, such that the influence of framing would be stronger for participants with higher GPA scores.

To test this hypothesis, we examined susceptibility to framing by way of a role-play exercise.

### Method

#### *Participants and Procedures*

Participants for the first experiment were 254 undergraduate business students who had reached at least junior standing in college. Missing data resulted in a usable sample of between 238 and 251 students, depending on the analysis. As part of a voluntary classroom exercise, participants role-played being a member of a disciplinary panel reviewing a case of alleged advertising deception. After reading a scenario with information about the case, participants responded to several questions intended to assess their perception of the severity of the organization's advertising transgression. In addition, participants decided whether to fine the company for its actions, and if so, how much the fine should be.

Attribute framing was introduced by manipulating objectively equivalent information about the case. Participants in the positive frame condition read a description with the following information:

1. After listening to the testimony of several witnesses for both sides, you believe there is a 20% chance Cartmate [the name of the fictitious company] **did not** realize the two groups had different skill levels *before* receiving the products.
2. From your years serving on the Ethics Committee, you estimate that 30% of other IAEP [International Association of Educational Products] companies take similar “liberties” with advertising copy.
3. Finally, again based on your years of experience, you feel that Cartmate has an overall ethical record that is clearly **superior** to one-third of IAEP’s membership.

Conversely, participants in the negative frame condition read an objectively equivalent version, but with the following information presented (Appendix A contains a copy of the positively framed version of the scenario):

1. After listening to the testimony of several witnesses for both sides, you believe there is an 80% chance Cartmate **did** realize the two groups had different skill levels *before* receiving the products.
2. From your years serving on the Ethics Committee, you estimate that 70% of other IAEP companies **would not** take similar “liberties” with advertising copy.
3. Finally, again based on your years of experience, you feel that Cartmate has an overall ethical record that is clearly **inferior** to two-thirds of IAEP’s membership.

Questionnaires were randomly distributed, completed during class, and returned to the instructor.

### Variables

Data to test the hypothesis were obtained by collecting responses to four variables.

**Frame.** For analytical purposes, positively framed scenarios were coded as 1; negatively framed scenarios were coded as 2.

**GPA.** University records provided GPA information ( $A = 4$ ;  $B = 3$ ;  $C = 2$ ;  $D = 1$ ).

**Transgression severity.** After reading about the advertising transgression, participants responded to four questions:

1. The question “How does your image of Cartmate compare with your image of most companies in today’s marketplace?” was followed by a 9-point Likert-type

response scale ranging from 1 (*much worse*) to 9 (*much better*).

2. The question “Relatively speaking, how ‘bad’ were Cartmate’s actions?” was followed by a 9-point Likert-type response scale ranging from 1 (*very bad*) to 9 (*not that bad*).
3. The question “Do you consider Cartmate’s actions. . .” was followed by a 9-point Likert-type response scale ranging from 1 (*a major infraction*) to 9 (*a minor infraction*).
4. The question “How severely should Cartmate be punished?” was followed by a 9-point Likert-type response scale ranging from 1 (*very severely*) to 9 (*not very severely*).

**Fine.** In addition, after reading about the advertising transgression, participants responded to the following question: “With this information in mind, what dollar fine, if any, is an appropriate fine to levy against Cartmate?”

### Results

We submitted the four items assessing transgression severity to factor analysis. A single-factor solution was produced that accounted for 76.6% of the variance in the four items. Given this result, we combined the items into a single measure of perceived transgression severity in which higher scores indicated respondents perceived the transgression to be of minor significance. Lower scores indicated that respondents perceived the transgression to be of major significance. The resulting four-item measure had a reliability coefficient of .86.

We tested the moderating effects of GPA by performing two hierarchical regressions. In the first, transgression severity was regressed on frame, GPA, and the interaction term created by crossing Frame  $\times$  GPA. Overall results were significant,  $F(3, 236) = 9.08, p < .01$ , as was the Frame  $\times$  GPA interaction term,  $t(237) = -1.98, p < .05$ . To check the nature of the interaction, we divided GPA into three groups (using SPSS Version 13 proc rank). We then computed mean transgression severity scores for the high- and low-GPA groups for each Frame  $\times$  GPA-group condition and used these scores to create Figure 1.

In the second hierarchical regression, fine (the dollar amount levied against the company) was regressed on frame, GPA, and the interaction term created by crossing Frame  $\times$  GPA. Again, overall results were significant,  $F(3, 234) = 20.17, p < .01$ , as was the Frame  $\times$  GPA interaction term,  $t(236) = 2.16, p < .05$ . We used the same procedure mentioned previously to check the nature of the interaction. We computed mean fines for the high- and low-GPA groups for each Frame  $\times$  GPA-group condition and used these scores to create Figure 2.

Figures 1 and 2 clearly illustrate the reason for the significant Frame  $\times$  GPA interaction. Although attribute framing

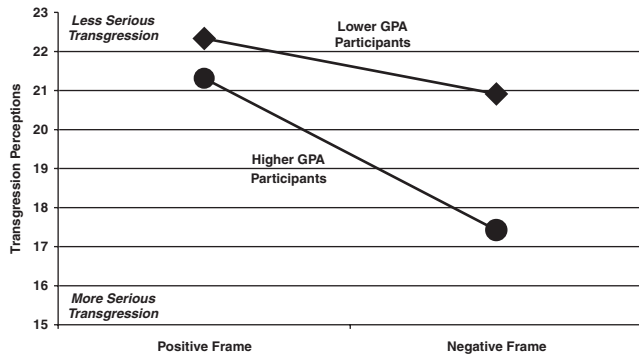


FIGURE 1 Frame × transgression perception.

manipulations affected both GPA groups, responses by participants in the high-GPA group were much more striking. In other words, consistent with the hypothesis, students in the higher GPA group appeared to be much more susceptible to the framing manipulation than did students in the lower GPA group. Interestingly, the difference in responses appeared to have only occurred in the negative frame condition. The response pattern of both GPA groups was almost identical in the positive frame condition. Although beyond the scope of this study, future researchers should explore why differences in responses only emerged in the negatively framed condition. Toward that end, Kuvaas and Selart (2004) reported that negative framing promotes greater cognitive effort, and may play a role in the explanation.

Discussion

Consistent with the notion that not everyone is equally susceptible to framing’s biasing influences, data from this first experiment indicate that GPA does, indeed, act in a moderating capacity. However, to the extent organizations hope employees with higher GPAs are more objectively rational, these results may be disappointing. Not only were higher GPA participants biased by attribute framing manipulation, they exhibited significantly greater susceptibility than did

their counterparts with lower GPAs. Higher GPA participants exhibited this tendency in both perceptions of transgression severity and in decisions about how much of a fine to levy against the offending company.

As mentioned previously, individuals with a higher motivation to invest cognitive effort in decision episodes may be more responsive (and susceptible) to subtle, underlying themes present in the decision context (Crawford & Skowronski, 1998). Given that GPA scores have been linked to critical-thinking skills (Bowles, 2000; Spaulding & Kleiner, 1992), and given that one of the characteristics of critical thinking is the ability to draw inferences (Cheung et al., 2002), then perhaps what these results suggest is that the elevated framing effects being exhibited by high-GPA participants is simply the result of these students being more responsive to what they believe to be the intended meaning of the framed information. In other words, high-GPA respondents may be more actively looking for the inferred meaning of the framed message that we presented in the decision scenario. To determine if this explanation of results from the first experiment had merit, we conducted a second experiment.

EXPERIMENT 2

Although the first experiment produced evidence of differences in susceptibility to framing, it provided little information about whether the framing manipulations created different perceptions of the underlying message within the scenario. We examined this possibility in a second experiment. Drawing on results from the first experiment, and based on relationships suggested by Crawford and Skowronski (1998), we expected higher GPA participants would be more sensitive to the subtle messages created by frames. Therefore, we hypothesized:

GPA and attribute framing manipulations will interact such that perceptions of the intended meaning of the framed information will be stronger for participants with higher GPA scores.

As in the first experiment, we used a role-play exercise as a way to collect the data needed to test this hypothesis.

Method

Participants and Procedures

Participants for the second experiment were 64 undergraduate business students enrolled in two classes of organizational behavior. All participants had reached at least junior standing in college. Participation in the exercise was completely voluntary.

We introduced the questionnaire used in this experiment as a communication exercise. Participants read a passage and respond to questions about the passage’s intended meaning.

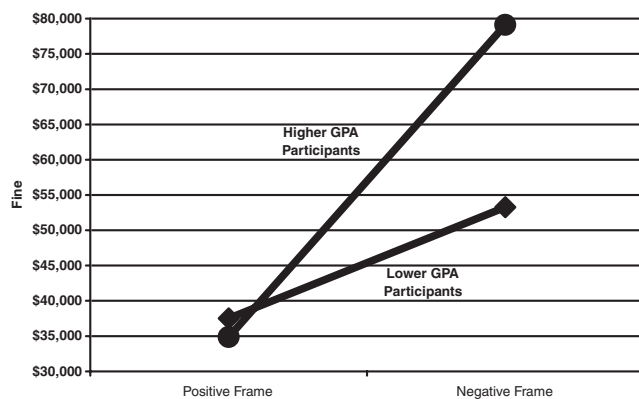


FIGURE 2 Frame × fine.

The major content of the questionnaire was a modified version of the scenario used in Experiment 1. All participants read a short paragraph telling about a company accused of conducting an unethical advertising campaign. As a member of an ethics committee, participants were listening to a report by a well-known and highly respected expert who makes several comments about the case. We created two objectively equivalent versions of the questionnaire by framing the expert's comments in either a positive or negative way (see Appendix B for a copy of the positively framed version). The positively framed comments made by the expert were the following:

1. "There is a 20% chance the company *did not* realize the two groups had different skill levels *before* receiving the products."
2. "I would estimate that 30% of other companies take similar "liberties" with advertising copy."
3. Finally, the expert indicated, "I believe the company has an overall ethical record that is clearly *superior* to one-third of other companies."

The negatively framed comments of the expert were:

1. "There is an 80% chance the company *did* realize the two groups had different skill levels *before* receiving the products."
2. "I would estimate that 70% of other companies *would not* take similar "liberties" with advertising copy."
3. Finally, the expert indicated, "I believe the company has an overall ethical record that is clearly *inferior* to two-thirds of other companies."

Questionnaires were randomly distributed, completed during class, and returned to the instructor.

### Variables

Responses from three variables provided data to test the hypothesis.

**Frame.** For analytical purposes, positively framed scenarios were coded 1; negatively framed scenarios were coded 2.

**GPA.** University records provided GPA information ( $A = 4$ ;  $B = 3$ ;  $C = 2$ ;  $D = 1$ ).

**Company impression.** After reading the passage, participants responded to five questions assessing the impression they thought the expert was trying to make:

1. The question "What kind of an impression of this company is the expert trying to create?" was followed by

- a 5-point Likert-type response scale ranging from 1 (*favorable*) to 5 (*unfavorable*).
2. The question "Is the expert trying to get us to view this company as" was followed by a 5-point Likert-type response scale ranging from 1 (*definitely guilty*) to 5 (*perhaps not guilty*).
3. The question "Is the expert implying the company" was followed by a 5-point Likert-type response scale ranging from 1 (*may have made an honest mistake*) to 5 (*was deliberately misleading*).
4. The question "Compared to other companies, does the expert view this company's actions as" was followed by a 5-point Likert-type response scale ranging from 1 (*not that bad*) to 5 (*very bad*).
5. The question "If the expert were asked to impose a fine against this company, would the fine be" was followed by a 5-point response scale ranging from 1 (*very high*) to 5 (*not very high*).

### Results

To begin data analysis, we submitted the five questions assessing company impression to factor analysis. A single-factor solution was produced which accounted for 64% of the variance in the five questions. Given this result, and after reverse-scoring responses to Questions 1, 3, and 4, we combined the five questions into a single 5-item measure of company impression. Higher scores on the measure indicated respondents perceived the company in more favorable terms. Lower scores indicated respondents perceived the company in more unfavorable terms. The measure had a reliability coefficient of .86.

To determine if GPA was again acting as a moderator of attribute framing, we regressed the 5-item company impression measure onto frame, GPA, and an interaction term created by crossing Frame  $\times$  GPA. Overall results were significant,  $F(3, 60) = 35.50$ ,  $p < .01$ , as was the Frame  $\times$  GPA interaction term,  $t(62) = -2.85$ ,  $p < .01$ . As was done in Experiment 1, to check the nature of the interaction, we divided GPA into three groups (using SPSS proc rank). We calculated mean scores for the company impression variable for the high- and low-GPA groups in each frame condition, and used these mean scores to create Figure 3. Because the purpose behind Experiment 2 was to assess whether higher GPA participants were more sensitive to framed messages, we used the term *sensitivity* in the title of Figure 3, and as the label for the y-axis.

Figure 3 shows a potential reason for the significant Frame  $\times$  GPA interaction. Although participants in both GPA groups were responsive to the framing manipulation, the slope of the line for the higher GPA group was more severe. Compared with mean impression scores of lower GPA participants, mean impression scores for higher GPA participants were higher in the positive framing condition and lower in the negative frame condition. Said differently, compared

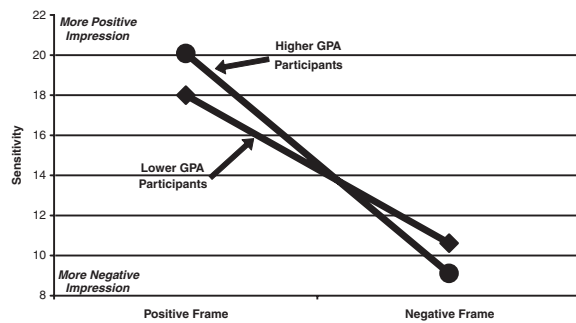


FIGURE 3 Frame × sensitivity.

to their lower GPA counterparts, higher GPA participants were more responsive to what they thought was the inferred meaning behind of the framed message.

## Discussion

Results from Experiment 2 informed results from Experiment 1. Specifically, these data suggest the reason higher GPA participants in the first experiment exhibited greater susceptibility to attribute framing may have been because they were more sensitive to what they believed to be the intended, underlying meaning of the framed scenario message. In other words, because negative terms were being used to depict the actions of the company in the negative frame condition, higher GPA participants may have been reading between the lines and inferring that they should respond in a more negative way. Although this may be a plausible explanation, clearly additional research is needed before we can make this claim with any confidence.

## GENERAL DISCUSSION

Data from these experiments suggest that GPA scores do moderate the effects of attribute framing. Students with higher GPAs were significantly more affected by the framing agent than were their lower GPA counterparts. These results are at odds with most individual difference research on susceptibility to framing. For example, Smith and Levin (1996) found that respondents with higher NC scores were less biased by framing. Given previous links between higher NC scores and higher academic performance (Sadowski & Gulgoz, 1996), it might have been expected that higher GPA participants in the present study would be less affected by framing, not more.

However, as mentioned previously, Crawford and Skowronski (1998) and Dunegan (2002) found that participants with higher NC scores exhibited a greater sensitivity to biasing effects than did participants with lower NC scores.

Consistent with Crawford and Skowronski's findings, data from these two experiments suggest that the style used to present information in an attribute framing type of study may be creating an underlying theme that higher GPA participants are more likely to recognize. As results from the present experiments show, participants with higher GPAs were indeed more sensitive to attribute framing manipulations and responded in a manner consistent with the implied theme of the framed scenarios. More so than participants with lower GPAs, higher GPA participants appeared to have been looking beyond the objective value of the information provided, and reflecting on the implied theme of the framed scenarios. In other words, they appeared to have been reading between the lines of the literal message and responding to what they believed was the intended message. Said differently, they were going beyond the literal and responding to the message inferred by the positive or negative terms used to describe the decision event.

Therefore, in concert with previous investigations of attribute framing, results from the present study suggest that there are definite variations in responses to framed information, and that there are individual difference measures that allow for the identification of framing sensitivity. However, recognizing the equivalence of framed information (i.e., the glass half full being equal to the glass half empty) does not imply that the frame does not affect respondent choices. In fact, these data suggest that higher GPA participants were more likely to recognize the intended message of framed attributes (Experiment 2), and were also more likely to respond to the perceived intent of the framed message by adjusting their assessment of transgression severity (Experiment 1) to be consistent with the framing manipulation.

Of course, recognizing the presence of framing in a message does not mean the receiver of the message necessarily chooses to go along with the direction the framing implies. For example, higher GPA participants might have been more aware of the between the lines intent in the framed manipulations used in the present study, but under different conditions might have chosen to ignore those framed cues and evaluate the information from a more neutral position. It is also quite possible that an individual who recognizes the framing efforts of another may actually be offended by the attempted manipulation and decide to respond in a retaliatory manner. This is an area in which further research would be most helpful.

However, it is clear from these results that significant variation exists in the way individuals respond to framing. The present study shows that a student's GPA helps explain some of that variability. Unfortunately, our data may not reflect the preferred relationship between GPA and sensitivity to attribute framing, at least from the perspective of employers. As discussed previously, employers look to GPA as an indicator of many of the desirable characteristics they want in an employee. Employers use GPA to screen candidates for interviews. They reward new hires that have higher GPAs with



higher salaries, and, as the research shows, for good reason (Roth et al., 1996). However, notwithstanding all of the positive attributes associated with higher GPA status, it would certainly appear from the results of the present study that one thing employers should not expect is that these students are any less susceptible to the biasing effects of framing.

In terms of practical, useful knowledge, therefore, results from our experiments suggest that employers should not assume more objective, unbiased decisions from employees with better academic credentials, at least when the decisions involve attribute information that has been framed. However, this too is useful information because it suggests that employers need to develop decision-making procedures that account for and guard against biases produced as a result messages manipulated through framing.

Further, from the academic side, these findings produce useful knowledge for the classroom. Specifically, as we teach students about decision making and the skills needed to make decisions in an appropriate and desirable way, we should not assume that the best and brightest necessarily are the least biased or the most objective.

In keeping with the theme of the study, we summarize our findings in two different ways. Employing a positive frame, students with higher GPAs were more sensitive and responsive to underlying informational cues than less academically successful participants. Conversely, a negative spin on the results suggests that students with higher GPAs were more susceptible and vulnerable to framing's biasing influences. Although some may find it disturbing, there is an odd comfort knowing that students who excel and students who merely survive the classroom can both use these findings for their benefit. It all depends on the frame they choose.

## REFERENCES

- Bowles, K. (2000). The relationship of critical-thinking skills and the clinical-judgment skills of baccalaureate nursing students. *Journal of Nursing Education, 39*, 373–376.
- Brown, B., & Champion, M. A. (1994). Biodata phenomenology: Recruiters' perceptions and use of biographical information in resume screening. *Journal of Applied Psychology, 79*, 897–908.
- Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48*, 306–307.
- Carvajal, M. J., Bendana, D., Bozorgmanesh, A., Castillo, M. A., Pourmasiha, K., Rao, P., & Torres, J.A. (2000). Inter-gender differentials between college students' earnings expectations and the experience of recent graduates. *Economics of Education Review, 19*, 229–243.
- Chatterjee, S., Heath, T. B., Milberg, S. J., & France, K. R. (2000). The differential processing of price in gains and losses: the effects of frame and need for cognition. *Journal of Behavioral Decision Making, 13*, 61–75.
- Cheung, C., Rudowicz, E., Kwan, A. S. F., & Yue, X. D. (2002). Assessing university students' general and specific critical thinking. *College Student Journal, 36*, 504–526.
- Crawford, M. T., & Skowronski, J. J. (1998). When motivated thought leads to heightened bias: High need for cognition can enhance the impact of stereotypes on memory. *Personality and Social Psychology Bulletin, 24*, 1075–1088.
- Dunegan, K. J. (2002, August). *Susceptibility to attribute-framing: Examining individual differences*. Paper presented at the Academy of Management Conference, Denver, Colorado.
- Fagley, N. S., & Miller, P. M. (1997). Framing effects and arenas of choice: Your money or your life? *Organizational Behavior and Human Decision Processes, 71*, 355–373.
- Garvin, D. A. & Roberto, M. A. (2001). What you don't know about making decisions. *Harvard Business Review, 79*(8), 108–117.
- Hammond, J. S., Keeny, R. L., & Raiffa, H. (1998). The hidden traps in decision making. *Harvard Business Review, 76*(5), 47–58.
- Hazer, J. T., & Highhouse, S. (1997). Factors influencing managers' reactions to utility analysis: Effects of SDy method, information frame, and focal intervention. *Organizational Behavior and Human Decision Processes, 82*, 104–112.
- Heinemann, K. G. (1996). What do today's employers want from job applicants? *T.H.E. Journal, 23*(8), 69–71.
- Jensen, A. R. (1980). *Bias in mental testing*. New York: Free Press.
- Krzystofik, A. T., & Fein, R. (1988). Does your firm use the right approach in hiring campus recruits? *Journal of Accountancy, 166*, 83–88.
- Kuvaas, B., & Selart, M. (2004). Effects of attribute framing on cognitive processing and evaluation. *Organizational Behavior and Human Decision Processes, 95*, 198–207.
- Kühberger, A. (1998). The influence of framing on risky decisions: A meta-analysis. *Organizational Behavior and Human Decision Processes, 75*, 23–55.
- LeBoeuf, R. A., & Shafir, E. (2003). Deep thoughts and shallow frames: On the susceptibility to framing effects. *Journal of Behavioral Decision Making, 16*, 77–92.
- Levin, I. P., & Gaeth, G. J. (1988). How consumers are affected by the framing of attribute information before and after consuming the product. *Journal of Consumer Research, 15*, 374–378.
- Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behavior and Human Decision Processes, 76*, 149–188.
- McAloon, D. T. (1994). The effect of alcohol abuse on academic achievement on two-year campuses. *Community College Review, 22*(1), 12–18.
- Meyerowitz, B. E., & Chaiken, S. (1987). The effect of message framing on breast self-examination attitudes, intentions, and behavior. *Journal of Personality and Social Psychology, 52*, 500–510.
- Meyers, C. (1987). *Teaching students to think critically: A guide for faculty in all disciplines*. San Francisco: Jossey-Bass.
- Nguyen, N. T., Allen, L. C., & Fraccastoro, K. (2005). Personality predicts academic performance: Exploring the moderating role of gender. *Journal of Higher Education Policy and Management, 27*, 105–117.
- Roth, P. L., BeVier, C. A., Switzer, F. S., & Schippmann, J. S. (1996). Meta-analyzing the relationship between grades and job performance. *Journal of Applied Psychology, 81*, 548–556.
- Roth, P. L., & Bobko, P. (2000). College grade point average as a personnel selection device: Ethnic group differences and potential adverse impact. *Journal of Applied Psychology, 85*, 399–406.
- Roth, P. L., & Clarke, R. L. (1998). Meta-analyzing the relationship between grades and salary. *Journal of Vocational Behavior, 53*, 386–400.
- Rynes, S. L., Orliczky, M. O., & Bretz, R. D. (1997). Experienced hiring versus college recruiting: Practices and emerging trends. *Personnel Psychology, 50*, 309–339.
- Sadowski, C. J., & Gulgoz, S. (1996). Elaborative processing mediates the relationship between need for cognition and academic performance. *The Journal of Psychology, 130*, 303–307.
- Smith, S. M., & Levin, I. P. (1996). Need for cognition and choice framing effects. *Journal of Behavioral Decision Making, 9*, 283–290.
- Spaulding, S. C., & Kleiner, K. A. (1992). The relationship of college and critical thinking: Are critical thinkers attracted or created by college disciplines? *College Student Journal, 26*, 162–166.
- Stanovich, K. E., & West, R. F. (1998). Evaluating principles of rational indifference: Individual differences in framing and conjunction effects. *Thinking and Reasoning, 4*, 289–317.



- Thoms, P., McMasters, R., Roberts, M. R., & Dombkowski, D. A. (1999). Resume characteristics as predictors of an invitation to interview. *Journal of Business and Psychology, 13*, 339–356.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*, 453–458.
- Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *Journal of Business, 59*, 251–278.
- Vickers, J. M. (2000). Justice and truth in grades and their averages. *Research in Higher Education, 41*, 141–164.
- Von Neumann, J., & Morgenstern, O. (1944). *Theory of games and economic behavior*. Princeton, NJ: Princeton University Press.
- Wise, D. A. (1975). Academic achievement and job performance. *American Economic Review, 65*, 350–366.
- Wolfe, R. N., & Johnson, S. D. (1995). Personality as a predictor of college performance. *Educational and Psychological Measurement, 55*, 177–185.

## APPENDIX A

### Positive Frame Questionnaire—Experiment 1

The International Association of Educational Products (IAEP) is a trade organization that reviews, tests, and evaluates educational products for children. Only products meeting IAEP's rigorous evaluation standards are able to display its highly coveted seal of approval. Parents and educators are willing to pay a little more for products carrying the seal because they know the products will be of superior quality. This makes membership in IAEP very desirable for companies in this market.

For the past six years, you have been serving on IAEP's Ethics Committee. Among other things, the Ethics Committee arbitrates grievances lodged against IAEP members. Any person or organization that believes an IAEP member has committed an ethical transgression can file a grievance with your Committee. The Ethics Committee will investigate the allegations and levy fines against the IAEP member if it believes the company is guilty of the accused transgression. Rulings by the Ethics Committee have always been accepted by IAEP members for two reasons. First, the Committee has a reputation for prompt *and* fair judgments. Second, and perhaps most important, compliance with any Ethics Committee ruling is a prerequisite for IAEP membership. Because consumers are extremely wary of children's educational products that do not carry the IAEP seal, membership in the association translates into **significantly** greater sales and profits. This being the case, virtually all manufacturers of educational products feel IAEP membership is of **considerable** valuable and are willing to comply with Committee rulings in order to maintain a "member-in-good-standing" status.

The Ethics Committee recently completed hearings against Cartmate, one of IAEP's members. It ruled that Cartmate's Executive Committee (see photo) had engaged in misleading and deceptive advertising. The ad in question had to do with an electronic device designed to help teach spelling skills. In the ad, Cartmate claimed a group of students using their product scored significantly higher on a standardized

spelling test than another group who used a competitor's product. While the claim was "technically" true, the Committee discovered the reason for the difference was that the two student groups were not equally proficient spellers to begin with. Although the ad implied the higher test scores were due to product superiority, in reality, students given Cartmate's device were already more accomplished spellers to begin with. Of course, there was no mention of this difference in the ad. The Ethics Committee felt the ad violated IAEP's ethical code, and concluded the ad was, at a *minimum*, very misleading.

In similar cases of unethical advertising, the Ethics Committee has levied fines ranging from \$25,000 to \$150,000, depending on specifics of the case. As you think about what you will recommend when the Committee reconvenes, you consider the following notes you made during the hearing:

During testimony, numerous consumer groups made remarks suggestive of a steady decline in the overall ethical climate of the marketplace.

- After listening to the testimony of several witnesses for both sides, you believe there is a 20% chance Cartmate **did not** realize the two groups had different skill levels *before* receiving the products.
- From your years serving on the Ethics Committee, you estimate that 30% of other IAEP companies take similar "liberties" with advertising copy.
- Finally, again based on your years of experience, you feel that Cartmate has an overall ethical record that is clearly **superior** to one-third of IAEP's membership.

## APPENDIX B

### Positive Frame Questionnaire—Experiment 2

- SITUATION -

Imagine you are a member of an ethics committee and you are listening to a report by a well-known and highly respected expert in the field. In part of the report, the expert tells a story about a company **accused** of using unethical advertising to promote one of its products. The ad in question had to do with an electronic device designed to help teach spelling skills. In the ad, the company claimed a group of students using their product scored significantly higher on a standardized spelling test than another group who used a competitor's product. While the claim was "technically" true, it was subsequently discovered that the reason for the difference in scores was that the two student groups were not equally proficient spellers to begin with. Although the ad implied the higher test scores were due to product superiority, in reality, students given the company's device were already more accomplished spellers to begin with.

When referring to the incident, the expert mentions the following:

- “There is a 20% chance the company *did not* realize the two groups had different skill levels *before* receiving the products.”
- “I would estimate that 30% of other companies take similar “liberties” with advertising copy.”
- Finally, the expert indicates, “I believe the company has an overall ethical record that is clearly *superior* to one-third of other companies.”

Copyright of Journal of Education for Business is the property of Taylor & Francis Ltd. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.