

Short Note

Effects of uncertainty on use of the availability of heuristic for self-efficacy judgments

LEIGH ANN VAUGHN*
University of Michigan, USA

Abstract

Under conditions of higher or lower uncertainty, college students recalled three or eight ways to improve exam performance and then estimated their likelihood of getting As on their easiest and hardest finals. Results supported the hypothesis that the availability heuristic is used only under conditions of uncertainty. Copyright © 1999 John Wiley & Sons, Ltd.

Self-efficacy judgments are often made under uncertainty, because they involve “estimating one’s capabilities for performance in situations in which one cannot be sure of the precise skills required, or the exact environmental circumstances that may help or hinder performance” (Cervone & Peake, 1986, p. 142). Uncertain events are predicted probabilistically by numerous, interrelated factors (cf. Bandura, 1989), and heuristics can be used to simplify such complex judgments (Tversky & Kahneman, 1974). The fewer and less variable the predictors of an event, the less likely the use of heuristics should be.

Uncertainty has also been defined as subjective lack of confidence that one’s attitude toward an object is correct (see Krosnick & Abelson, 1992, for a review). Attitude certainty is considered an aspect of attitude strength (e.g. Krosnick & Abelson), and confers resistance to conversation norms invoked by leading questions (Swann & Ely, 1984; Swann, Pelham, & Chidester, 1988). The more uncertain a belief, the more susceptible it may be to contextual cues (cf. Tourangeau & Rasinski, 1988), including systematically processed content, or information provided by heuristics. Thus, although the focus in attitudes research is on subjective (not objective) uncertainty, that literature also suggests that heuristics are mainly used under uncertainty.

*Correspondence to: Dr Leigh Ann Vaughn, Department of Psychology, Ohio State University, Columbus, OH 43210, USA.

The present research addressed use of the availability heuristic (Tversky & Kahneman, 1973) for self-efficacy judgments about events of varying uncertainty, namely getting As on one's easiest and hardest finals. The availability heuristic is use of subjective ease or difficulty of recall for frequency or likelihood judgments (Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, & Simons, 1991), which can be examined by having participants recall either a low (easy) or high (difficult) number of relevant examples before a judgment. Use of the availability heuristic is shown by lower frequency or likelihood judgments among participants who recalled a difficult amount than participants who recalled an easy amount.

Near the beginning of a semester, many students seem fairly certain about getting an A on their easiest final, but uncertain about how well they will do on their hardest final. As finals approach, the certainty of getting a particular grade (A or not) in a course should increase, because students can extrapolate from their course performance thus far. The hypothesis tested in this experiment was that students would use the availability heuristic only for judgments made near the beginning of the semester, and only about their hardest final.

METHOD

One hundred and seventy-six college students were randomly assigned to conditions in the 2 (Number of Examples Requested: 3 versus 8) \times 2 (Time of Semester: third week of classes versus last day of classes) \times 2 (Order of Questions about Exams: easiest/hardest versus hardest/easiest) between-subjects experiment. A researcher approached students sitting alone outside a campus computing center and asked if they would mind doing a one-page survey about things students do to get good grades on finals.

After writing either three or eight "examples of things that you are doing, have done, or are planning to do to improve your chances of getting good grades on your final exams this semester", participants reported their likelihood of getting As on their easiest and hardest final exams, and the difficulty of recalling examples; on 9-point scales (9 = high).

RESULTS

Manipulation Checks

Ninety-seven percent of participants who were asked to report three examples did so, while 70.45% of participants who were asked to list eight examples did so, chi-square likelihood ratio (7) = 204.76, $p < 0.001$. Because some participants did not provide as many examples as requested, an additional set of analyses was done excluding those participants. The patterns of results did not change, though the statistics had somewhat lower power. Results from the entire sample are reported.

A $2 \times 2 \times 2$ ANOVA showed that participants in the eight examples condition rated the recall task more difficult ($M = 5.15$) than participants in the three examples condition ($M = 3.45$), $F(1, 167) = 21.16$, $p < 0.001$, for the main effect.¹ No other effects reached significance.

¹Degrees of freedom vary because a few participants did not answer all questions.

Table 1. Self-efficacy judgments as a function of time of semester, type of exam, and number of examples

Time of semester	Three examples		Eight examples	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Easiest final				
Beginning	7.73	1.37	7.90	1.21
End	7.90	1.20	7.71	1.31
Hardest final				
Beginning	5.57	1.95	4.57	2.05
End	4.19	2.59	4.23	2.43

Note: Higher numbers indicate higher likelihood of getting an A.

Self-efficacy judgments

As predicted, a $2 \times 2 \times 2$ ANOVA showed that judgments for the 'easiest class' exam were not context dependent, $F(1, 163) < 2$, n.s., for each main effect and interaction.

Judgments for the 'hardest class' exam were context dependent, but only at the beginning of the semester. Means are displayed in Table 1. At the beginning of the semester, participants relied on the availability heuristic, reporting lower self-efficacy after recalling eight (difficult) than three (easy) examples; planned contrast with separate variance estimate, $t(85.8) = 2.35$, $p = 0.02$. As predicted, judgments at the end of the semester were not context dependent; planned contrast with separate variance estimate, $t(84.3) = -0.08$, n.s. An omnibus F -test showed no significant question order effects, $F(1, 167) < 3$, n.s.

DISCUSSION

Results indicate that the availability heuristic is used under conditions of uncertainty. The more efficacy-enhancing content students brought to mind (greater difficulty of recall), the more pessimistic they were about exam performance, but only regarding their hardest exam, and only near the beginning of the semester (when they would have less experience from which to extrapolate their grades).

Judgments in this experiment were not extremely consequential in themselves (e.g. accountability was low), and were made in a public environment where students may not have been motivated or able to devote undivided attention to the task. Under higher elaboration likelihood conditions, individuals tend to rely on recalled content rather than ease of recall (e.g. Rothman & Schwarz, in press). Deliberative processing should result in higher self-efficacy judgments the more efficacy-enhancing content students bring to mind. Future research should examine whether, under conditions of high elaboration likelihood and uncertainty, individuals will base self-efficacy judgments on careful scrutiny of relevant information.

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