

RESPONSE

EXECUTIVE JOB DEMANDS: SUGGESTIONS FROM A STRESS AND DECISION-MAKING PERSPECTIVE

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Hambrick, Finkelstein, and Mooney advance propositions concerning the effects of job demands on executive leadership and decision-making behaviors. I aim to encourage further thinking in this area, with comments flowing from a consideration of the stress and decision-making literature and the positive affect and problem-solving behavior literature. This perspective suggests both a finer-grained conceptualization of the executive job demands construct informed by specific characteristics of decision problems and a finer-grained conceptualization of executive decision behaviors focused on elements reflecting correspondence and coherence outcomes of decisions.

I am very encouraged to see an interest in executive job demands from some of the leading scholars of executive behavior (Hambrick, Finkelstein, & Mooney, 2005). As one who has studied the effects of job demands in a variety of occupations other than top executives, such as nurses, firefighters, police officers, accountants, and construction workers, I have become convinced that the job demands people face have pervasive effects on their job behaviors, as well as their mental and physical well-being. Moreover, experienced stress, a consequence of overly high job demands, might affect the quality of one's decision making. Given the high impact of executive decisions on the functioning of their organizations, researchers are compelled to seek an understanding of executive-level job demands and their consequences. It is my hope, then, that Hambrick et al.'s paper stimulates a broad empirical effort in this arena. The goal of this commentary is to aid that effort.

My comments here are informed primarily by a consideration of the stress and decision-making literature, and secondarily by the broader work stress literature. Decision making arguably is the most critical component of an executive's job, even though it is not the only one. Executives are called on to promote a vision for the firm, develop a top management team, represent the organization to others, and do many other important functions (Kotter, 1982; Mintzberg, 1990). But most of the stories of spec-

tacular success and failure seem to revolve around strategic choices that executives make. These decisions always involve making choices among alternatives, which requires evaluating evidence concerning estimations of payoffs and risk.

Effective decision making also involves generating innovative new alternatives. In the literature on stress and decision making, this latter process generally has been ignored. But I believe that the broader literature on affect gives us some insights in this regard, so I will refer to that literature as well. I believe, then, the decision-making literature can inform our understanding of how job demands or, more broadly, stress might affect these processes. I will therefore organize my comments on the basis of two general questions. First, does stress affect decision making? If so, what aspects of the decision-making process are affected, and what are the theoretical explanations? Second, given what we know about stress and decision making, how should we conceptualize and measure executive job demands?

STRESS AND DECISION MAKING

To begin, I should clarify that the concept of stress plays a significant role in the development of Hambrick et al.'s propositions about the consequences of job demands. Thus, I would like to emphasize the overlap between Ham-

brick et al.'s conceptualization of executive job demands and what we commonly think of as a stress response. Hambrick et al. "define executive job demands as the degree to which a given executive experiences his or her job as difficult or challenging" (p. 474), and they posit that "the concept of executive job demands is not the same as executive stress" (p. 481). They argue that stress is a reaction to job demands and, thus, may be "a key mediator" (p. 481) for some of the effects they propose.

While I agree that stress is a reaction to job demands, it may be difficult to actually distinguish job demands, as conceptualized in Hambrick et al.'s article, from the stress response itself. At least in the cognitive appraisal view of stress (e.g., Lazarus, 1991), the stress response centers on both individuals' cognitive appraisals of environmental challenges, in terms of their potential to affect these individuals' well-being, and an assessment of these individuals' ability to cope with these challenges. While the Hambrick et al. conception does not capture all of these elements, it comes close.

Moreover, the theoretical processes they allude to in order to explain the proposed impacts of job demands on leadership and decision making, including stress itself, seem to reflect much of the general thinking found in the stress literature. There is no consensus on how to measure the "stress response" itself, and choices have ranged from felt pressure, tension, and anxiety to stress hormone output (Ganster & Schaubroeck, 1991).

The reason I dwell on this discussion of stress is to be clear about why one would think high job demands might have the effects Hambrick et al. propose. This theoretical explanation seems to rest on one of two broad premises. One is that high job demands produce a constellation of physiological responses—principally arousal—that impair one's functioning on certain kinds of tasks. The famous Yerkes-Dodson Law describes an inverted-U-shaped relationship between arousal and performance, in which performance peaks at some optimal level, and it is commonly invoked to account for the effects of stress on task performance (Gardner & Cummings, 1988). A second explanation for the putative effects of high job demands is simply that they reflect high task difficulty. Almost as a matter of definition, people do not perform very difficult tasks as well as they do easier ones.

It is important to distinguish between these two theoretical explanations. The first describes a change in the decision maker, brought about by exposure to high job demands, whereas the second describes a change in the task itself. I argue below that, at least concerning the decision-making literature, the evidence favors the second explanation. This conclusion, if warranted, has implications for how we should conceptualize and measure executive job demands, which I address later.

STRESS AND EXECUTIVE DECISION MAKING

Writers in the organizational sciences are fond of stating, following Simon (1956), that executive decision makers are "boundedly rational." They face too many sources of information to be able to attend to them all, and, therefore, they must satisfice rather than optimize (e.g., Eisenhardt, 1989). Hambrick et al. invoke this general explanation to explain the effects of excessive job demands on executive decision making. In short, the general assumption has been that people are not optimal decision makers in terms of their approximation to a normative model and that high demands make them even less so. Simon's bounded rationality model inspired the study of specific ways that people deviate from the use of the normative model. Investigators have identified numerous heuristics and biases that decision makers use in their departure from rationality, and the list continues to grow (Kahneman, Slovic, & Tversky, 1982). This research suggests the various ways that bounded rationality shows itself.

What is the actual evidence for the assertion that high job demands will detract from the quality of decision making? If they do, which demands are the most important? As intuitive as these effects are, the vast literature on decision making yields findings that are contradictory and difficult to integrate concerning the role that stress (and, by extension, job demands) plays on the quality of decision making. As Hammond (2000) argues in his critical review of this literature, there are so many types of decision tasks and so many different operationalizations of stress, one cannot draw many useful conclusions. Moreover, Yates, Veinott, and Patalano (2003) recently noted that there is nothing approaching a consensus about what decision quality even is.

Given this lack of agreement on an overall definition of decision quality, it is necessary to examine specific aspects of the decision process, and these vary by the type of decision theory one chooses. Hammond (2000) divides theories of decision making and judgment into "correspondence" theories and "coherence" theories. Correspondence theories are those that seek to explain the factors that produce accuracy in decision making—decisions that correspond with the facts. For example, did a CEO make an accurate forecast of consumer demand or of the impact of new government regulations on the operations of the firm? Correspondence theories range from signal detection theory (Broadbent, 1971) to social judgment theory (see Brehmer & Joyce, 1988).

Coherence theories, in contrast, seek to explain the rationality of judgments—whether decisions meet mathematical (or normative) standards and lack contradictions. For example, is a CEO's judgment about the riskiness of a merger affected by biases such as anchoring and insufficient adjustment? Does the positive or negative framing of the decision change the CEO's risk preferences? These theories range from subjective expected utility models (e.g., Raiffa, 1968) to the study of heuristics and biases (Kahneman et al., 1982). They differ not only in their goals but in their methodologies, so when one asks what the effect of stress is on decision making, one must specify which aspects of the decision process are of interest.

Stress and the Narrowing Effect

The outcome that has received the most attention has been "narrowing," which refers to the process of focusing one's attention on fewer pieces of information when making a decision (Yates, 1990). Thus, decision makers who narrow their perception, as a result of stressful demands, might consider fewer choice alternatives or consider fewer bits of evidence (cues) when evaluating different alternatives. This seems to be the effect that provides the basis for Hambrick et al.'s Propositions 1 and 2.

There exists a considerable body of research on exogenous stressors, such as heat, physical danger, and electric shock, but these experiments have few parallels with executive decision making, nor do they uniformly suggest a narrowing effect. There is evidence, however, that stress in

the form of time pressure sometimes produces a narrowing effect (Hammond, 2000). But this conclusion needs further analysis if we want it to inform our understanding of executive strategic decision making.

Consider Payne, Bettman, and Johnson's (1988) computer simulation studies. These researchers used a process-tracing methodology in a within-subjects design to determine the heuristic choice strategies decision makers use when facing time constraints, which, of course, simulates a condition that overloaded executives face. Time pressure did produce narrowing in the sense that subjects employed various heuristics rather than a strict normative approach. The simulation was able to identify, however, which heuristics would work best in different tasks and contexts, and they were not always the same ones, nor was a truncated normative model always superior.

What the experiments showed was that decision makers varied their decision-making strategies to conform to the demands they faced, and generally in ways that led to better decisions. Payne et al. conclude: "People appear highly adaptive in responding to changes in the structure of the available alternatives and to the presence of time pressure. In general, actual behavior corresponded to the general patterns of efficient processing identified by the simulation" (1988: 534).

This general conclusion is consistent with results reported by Raby and Wickens (1994), who studied pilots in a flight simulator. These researchers varied workload demands by giving more information to process and less time in which to do it by increasing the pilots' air speed as they approached the airport. What Raby and Wickens found was that under high workload pressure, pilots did indeed attend to fewer tasks, but they prioritized these tasks in a rational way. The investigators found that the scheduling of these tasks (in terms of optimality) and the performance of them was *not* degraded by high task demands. Although Raby and Wickens did not use the term *adaptive responding*, they might have, for, like Payne et al. (1988), their findings suggest that people are indeed capable of adopting very effective strategies for making decisions when they face time pressures and information overload.

Such studies suggest that although workload demands, in the form of time pressure, might

produce narrowing of the decision process, this narrowing can actually be an adaptive mechanism that allows people to make the best decisions they can under difficult conditions. Taking shortcuts, in other words, can be good. In fact, attempting to optimize decisions by following a normative model (i.e., a truncated normative model when time is short) can be less effective than using a heuristic that fits the context.

In the case of executives, what heuristics might they employ when faced with overwhelming job demands? Hambrick et al. suggest two: go with what you know best (Proposition 1) or imitate other firms (Proposition 2). It remains to be seen whether these are the particular heuristics that are chosen most and whether they might actually represent choices that illustrate the adaptive capabilities of the executive rather than a degradation of the decision process.

I should note, by the way, that this literature on stress and decision making does not yield any evidence that a stress response itself, characterized by high arousal levels, produces any decrement in the quality of decisions. As decisions become more difficult—as uncertainty increases or as the amount of information to process becomes overwhelming—decision quality, measured against some external criterion such as return on investment or market share, can be expected to decline. But we need to be clear that we are talking about a change in the decision problem itself and not a change in the decision maker. There is little evidence that such demands of the decision context itself degrade the quality of the processes that the decision maker employs.

It is tempting to invoke the Yerkes-Dodson Law to advance hypotheses about how high job demands will degrade various dimensions of performance by inducing too high a state of arousal. But the evidence for such an inverted-U relationship between arousal and task performance in realistic situations is quite meager. We should recall McGrath's (1976) demonstration of how increasing task difficulty, with its negative impact on performance, and increasing arousal, with its positive effects on task performance, can cross to create the appearance of an inverted U. So it might be with decision making. Increasing task demands can improve the processing of information and choice of optimal decision strategies because of the high arousal they produce. At the same time, such increases

in job demands can reflect an increase in decision difficulty, which leads to poorer decision outcomes. What might appear as an inverted-U relationship may merely reflect the confluence of these two opposing processes.

Thus, I disagree with Hambrick et al.'s conclusion that the relationship between high job demands and performance is "well established in the literature" (p. 481). An enormous body of job demands and stress research has created a strong case for the proposition that job demands that are too high and accompanied by too little control create physical health problems, but researchers have been consistently unsuccessful in making such a case for job performance (Ganster & Schaubroeck, 1991).

Risk and Decisions

Another way that excessive job demands might detract from the coherence of the decision-making process is by altering risk preferences (Tversky & Kahneman, 1981). People tend to be risk averse when decisions are framed as choices among gains and tend to be risk seeking when decisions are framed as choices among losses. Prospect theory (Kahneman & Tversky, 1979) explains this effect by specifying a steeper utility curve on the loss side of a reference point than on the gain side. Despite evidence that framing can render one's risk preferences unstable (an irrational outcome), I know of no evidence that job demands, or stress, will do so as well or will exacerbate the effects of framing. In fact, time pressure appears to actually lessen framing effects (Svenson & Benson, 1993).

This seems to be an important question, for one would hope that the risk preferences of an executive decision maker would be consistent and conform to the risk strategy of the firm. Hambrick et al.'s Proposition 4 seems relevant to this question, for it posits that successful prior performance will lead to greater risk taking when achieved under high job demands than under low job demands. Hambrick et al. propose that overconfidence will explain this effect, and they might be right. There is some experimental research that, in a dynamic environment in which a series of decisions must be made and feedback about prior decisions is provided, prior success does lead to subsequently riskier decisions (Slattery & Ganster, 2002).

These experimental results, by the way, contradict the general conclusions of such management writers as Sitkin and Pablo, who observe that the prospect theory prediction of risk aversion following past success "can be found in diverse contexts" (1992: 245). Slattery and Ganster (2002) have demonstrated an experimental model that seems capable of testing such predictions in more realistic ways than most studies on framing effects have done.

Job demands could be incorporated into this experimental paradigm and competing explanations could be tested. For example, if high demands exacerbate the risk-seeking effects of prior success, does this effect operate by producing overconfidence (which could be gauged by measuring the subjective probabilities for success and failure) or through altering the risk preferences themselves? This would seem a productive area for research, for as experimental conditions become more like those executives face, it appears that generalizing the vast laboratory literature on framing effects to managerial contexts becomes suspect (see the meta-analysis by Kühlberger, 1998).

Executive Decision Making from a Stress and Affect Perspective

Although the stress literature does not paint a clear picture of the effects of job demands on decision making, a broader concern with stress points us to research on affect, for if stress does anything, it produces strong affective reactions. Stress research generally is concerned with negative affect, mood, and negative emotions (especially anxiety and depression). In the realm of decision making, the emphasis has been on whether and how such responses disrupt the decision-making process.

The flip side of this concern is whether there are processes that actually *enhance* performance in this area. In this regard, the most exciting developments in recent years concern the beneficial impact that transitory *positive* affect has on a variety of decision-making processes in a broad range of settings, including organizations (George & Brief, 1996; Isen & Baron, 1991; Staw & Barsade, 1993). Positive affect's impacts are found to be consistently beneficial, and they have been replicated in different laboratories, in widely varying contexts, and with populations

ranging from preschool children to practicing physicians.

The results have been so strong that they have begun to overwhelm the contrary view asserting that it is *negative* affect that focuses attention and improves decisions (Forgas, 2002; Schwartz & Bless, 1991). **Positive affect, induced by small, everyday kinds of events, promotes cognitive flexibility, innovation, problem solving, and creativity.** Moreover, induced positive affect has been shown to increase open-mindedness, flexibility, and a willingness to consider disconfirming evidence (e.g., in physicians making diagnoses). Finally, positive affect in negotiation settings leads people to adopt a more problem-solving approach that focuses on generating integrative solutions (see Isen & Labroo, 2003, for a review of this work). The effects of state affect occur over and above stable dispositional affect, which can also influence behavior (Weiss, Nicholas, & Dauss, 1999). Ashby, Isen, and Turken (1999) have recently even advanced a neuropsychological theory that proposes that the effects of positive affect are mediated by dopamine releases in the brain.

It is hard to find a behavioral or cognitive response from the above list that is not highly relevant to executive performance. Wouldn't it be ironic to discover that giving executives a basket of cookies could yield the improvements in behavior and decision making that expensive executive training programs have failed to produce? But even if it does not convince us to shutter our executive development centers, **this body of research should at least prod us to consider the impact that stress might have on executives insofar as it reduces the frequency and intensity of positive affective states.** A related line of research suggests that when decision makers are cognitively overloaded, which is suggested by Hambrick et al.'s job demands construal, their judgments actually become more dependent on affect (e.g., Finucane, Alhakami, Slovic, & Johnson, 2000; Shiv & Fedorikhin, 1999).

I should note that, to the extent that stress induces negative affect and emotions, it does not necessarily follow that positive affective experiences will be reduced. This conjecture rests in part on a bipolar view of affect, and there are some who have advanced dual continuum models of affect that suggest that the two types of experience can vary independently (e.g., Ca-

cioppo & Gardner, 1999). But even though there is reason to believe that positive and negative affect might arise from separate motivational substrates, and thus have different and independent effects on behaviors, this view does not contradict an assertion that certain events (such as job demands) will produce predictable and opposite movements in the two forms of affect. In any event, positive affect has mostly been ignored in the context of the job demands and stress literature, and this constitutes a fertile ground for research concerning stress and decision making.

Summary

I believe the following statements constitute a fair summary of what we actually know about the effects of job demands on decision making.

1. High job demands in the form of time pressure seem to alter the behavior of decision makers in the form of narrowing time and attention devoted to all the information available in the decision context. This does not mean, however, that such narrowing effects degrade the coherence of the decision-making process and, hence, the quality of the decision. In fact, narrowing in the form of the use of certain heuristics (e.g., elimination by aspects or lexicographic strategies) might actually represent adaptations that allow the executive to make the best decision possible under difficult circumstances. It is interesting to note that increased time pressure has actually been shown to *lessen* the framing effect—a bias that does represent a reduction in coherence (Svenson & Benson, 1993).
2. There is little evidence that the stress response itself—or its sequelae (e.g., arousal)—degrades the decision-making process. Most available evidence suggests that high arousal supports *increased* efficiency of information processing and task completion. Research has not so far convincingly shown that there is a downturn in the monotonic positive relationship between arousal and performance. It often seems heretical when one denies the validity of the inverted-U hypothesis, for like weapons of mass destruction (WMDs) in Iraq, virtually everyone believed in their existence and this belief persisted in the face of a complete lack of confirming evidence (Blix, 2004). Like the existence of WMDs, it is difficult to disprove the existence of an inverted U, but the lack of supportive evidence should now be considered overwhelming.
3. Rather than impairing the effectiveness of the decision-making process, high job demands should be seen as increasing the difficulty of the decision task itself. It would be misleading to conclude that because decision outcomes do not turn out as positive when executives see their jobs as overly difficult, those executives are employing less effective strategies for making decisions. We need to seriously consider the hypothesis that they are better decision makers under difficult circumstances than they are in easy ones. On average, their results will not be as favorable because the choices they face or the reliability of the information they have is worse.
4. Positive affect appears to improve many aspects of the decision-making process, especially those concerned with generating innovative alternatives. This effect has been ignored in the stress and decision-making literature, yet it suggests interesting new avenues for stress researchers to explore.

These conclusions have implications for how we conceptualize and measure executive job demands, a subject I turn to next.

THE CONCEPTUALIZATION AND MEASUREMENT OF JOB DEMANDS

Given the conclusions listed above, what are their implications for the conceptualization and measurement of executive job demands? If we are to distinguish between competing hypotheses of job demands as sources of overarousal versus decision task difficulty, then our assessment of job demands must represent aspects of the decision task as completely as possible. In short, we need to know what executives mean when they say that their jobs are too difficult or challenging. Does this mean that they have too much to do and too many decisions to make (i.e., quantitative overload)? Or does it mean that the decisions they have to make involve too much uncertainty owing to a shortage of reliable information (or ways of assessing its reliability) or that they are faced with too few attractive alternatives (i.e., qualitative overload)? I argue that answering these questions involves collecting reports and appraisals of specific decision parameters.

I am thus suggesting that Hambrick et al.'s conceptualization of job demands as overall appraisals of job difficulty is too coarse and would not yield the specific insights about decision parameters that might be the key determinants

of executives' decision processes. In addition, these key determinants may not even explain executives' overall appraisals of job demands themselves, nor might such appraisals mediate their effects on decisions.

I am not as optimistic as they are about the degree of convergence of objective job demands—whether they be cast as decision parameters, as I have suggested, or as the various determinants they propose—and overall appraisals of job difficulty. They cite some of our work to support their optimism, so I will digress briefly to argue that I would actually expect little such convergence.

In the study they cite (Fox, Dwyer, & Ganster, 1993), we developed a measure of workload demands for institutional nurses after a considerable qualitative research phase that involved interviews with nurses and their supervisors, as well as direct observations. These measures consisted of two primary indicators: the patient load and the percentage of the workday that was spent in direct contact with patients. The convergence between self-reports of these indicators and the reports of the nurse supervisors was very high ($r > .90$). But when we correlated these self-report measures with a subjective appraisal of quantitative workload, using the most common measure (Caplan, Cobb, French, Harrison, & Pinneau, 1975), we observed correlations that explained less than 10 percent of the variance ($r = .22$ for patient load and $r = .30$ for contact time).

Although statistically significant, these correlations suggest that other factors play a non-trivial role in transforming perceptions of workload demands, *per se*, into a cognitive appraisal of workload difficulty. Others have found similar low convergences among different measures of job demands (Spector, Dwyer, & Jex, 1988). Perceptions of objective demands not only do not converge well with subjective appraisals of the difficulty of those demands, but there is evidence that the objective demands themselves are predictive of long-term outcomes independent of the subjective appraisals (Ganster, Fox, & Dwyer, 2001). Thus, subjective appraisals of job difficulty or challenge are suspected of being both contaminated (e.g., by individual traits of the executive) and deficient in that they do not capture key determinants of the hypothesized outcomes of such demands.

One thing we have learned from the work stress literature is that both objective demands and individual traits are important in determining various well-being outcomes—and that we need to study both. A reliance on subjective appraisals prevents us from separating their effects, for they tend to represent elements of both the person and the situation (Frese & Zapf, 1999; Schaubroeck, 1999).

Hambrick et al. offer us a useful list of objective environmental and organizational variables that might serve as antecedents to job demand appraisals. Some of these demands are conceptualized at the industry level (e.g., lack of munificence, competitiveness, low barriers to entry, complexity), and others reside in the executive's organization (e.g., lack of resources such as patents, resistant or lethargic workforces, primitive systems, and underdeveloped management cadres). Still other sources of demands arise from pressures for high performance from various stakeholders, board composition, and the market for corporate control. Finally, executives can create greater demands for themselves through their own aspiration levels. These seem like reasonable choices and are worthy of study.

However, I believe it would be a mistake to move directly from the assessment of such variables to the subjective appraisals of job difficulty, for we need to understand how these variables might determine the parameters of the decision tasks themselves. To do this, we need to specify a set of both quantitative and qualitative decision demands that intervene between the kinds of environmental factors that Hambrick et al. propose and the appraisals and behaviors of the executive. It is not my intent to develop a complete model of these intervening factors here, but some examples will illustrate what I have in mind.

Decisions need to be characterized as to whether they consist of correspondence or coherence problems, and real executive decisions likely contain elements of both. Such classification suggests factors that should be addressed. Consider a strategic decision about whether to acquire another firm. This complex decision includes correspondence problems, such as forecasting outcomes of the merger, and these determine risk estimates, which then factor into choice decisions. For correspondence problems, social judgment theories (e.g., the Brunswick

Lens Model and the Lens Model Equation; see Cooksey, 1996) offer very specific insights, for they model uncertainty in terms of cue validities and decision behaviors in terms of cue utilization. In essence, focusing on such variables forces us to model the uncertainty inherent in the decision task versus how the decision maker uses the information that is available.

On the coherence side, decision analysis and heuristics and biases models provide another set of variables. Is the decision positively or negatively framed? What are the alternatives from which the decision maker is choosing, and what are the values of the outcomes associated with each of the alternatives? Given the values of the outcomes and their associated probabilities, how does the behavior of the decision maker compare to a normative model (e.g., a subjective expected utility model that specifies a multiplicative weighting of outcome values and probabilities)?

Breaking decision problems down in this way allows us to gain insights into the relationship between environmental factors (e.g., environmental munificence or complexity) and specific decision responses of executives. Do complex environments change decision making, for instance, because they produce cues with lower validities (uncertainty), or do they change the number of cues that decision makers attend to and the consistency with which they use them? Operationalizing such variables is not a simple task, and I suggest below that some of these questions might be most amenable to study in a laboratory setting, especially one that creates realistic decision-making scenarios.

The conceptualization of executive job demands outlined above requires that demands be operationalized at the level of the individual decision and not as the overall appraisal of workload difficulty. Concomitantly, the behaviors of the executive must also be measured at the level of the decision, for they would be hypothesized to vary from decision to decision as a function of the specific decision demands presented by each case. In contrast, the Hambrick et al. conceptualization is more general and, thus, appears easier to implement.

I would argue, however, that assessing job demands as specific decision parameters would be no more difficult from a timing perspective than would be Hambrick et al.'s approach. Although their job demands are more general in

the sense that they might have some stability over time (although the authors do not specifically address this issue), some of their key propositions about executive decisions (Propositions 1 and 2) imply that one would need to measure behaviors for specific decisions. Depending on how many such decisions were made over the period of time being studied, it might be unreasonable to assume that job demands remained constant across all the decisions. Operationalizing job demands in terms of decision characteristics, nevertheless, will be challenging in field settings, and invariably will rely on self-reports of executives themselves, although many of these could be measured by other key informants as well.

RESEARCH SUGGESTIONS AND CONCLUSIONS

Conducting Experimental Simulations

Laboratory experiments can play a very significant role in the study of demands and decision making. Well-developed models exist that not only specify the key decision parameters in both correspondence and coherence terms but that also provide methods that allow the operationalization of these parameters and the specific ways that decision makers respond to them (see Hammond, 2000, for a thorough discussion of these). Using these approaches, researchers can manipulate demands that are both endogenous to the decision (e.g., uncertainty, amount of information) and exogenous to it (e.g., affective interventions). These two types of demands can have both main and interactive effects on the accuracy of decisions and the coherence of the decision maker.

I am convinced that realistic decision-making scenarios can be devised that faithfully represent the key constructs executives face in practice. I also believe that it is important for such realistic scenarios to be used in this research. It appears, for example, that much of what we think we know about such well-established heuristics as the framing effect might, in fact, generalize poorly to realistic decision-making settings. In his meta-analysis of framing effects, for instance, Kühlberger (1998) demonstrated that, as the research design deviated from the original framing effects paradigm (the Asian disease problem), framing effects became less likely to

be replicated. Using a dynamic decision-making scenario that involved multiple decisions, uncertainty, and real consequences (as opposed to hypothetical gambles), we failed to produce the framing effect and failed to support prospect theory predictions about the effects of prior success (Slattery & Ganster, 2002; see also Hollenbeck, Ilgen, Phillips, & Nedlund, 1994).

Thus, realistic scenario experiments can not only inform the study of executive job demands but can also test the generalizability of much of the experimental decision-making literature. Finally, there is no reason why experienced executives cannot serve as study participants in such simulation experiments, for they can be incorporated as engaging and instructive activities in executive development programs.

Taking a Stress Perspective

Hambrick et al. suggest that we should also consider the effects of executive job demands on executive stress. Of course, I agree with this suggestion, because stress-related well-being outcomes are important in their own right. Moreover, the research on positive affect and decision making discussed above points to a direct connection between such stress outcomes and the quality of executive decision making (not to mention negotiation, problem solving, and even prosocial behaviors). Thus, I believe it would be productive to focus on affective states of executives and relate them to their decision-making processes. Affective states could arise from decision-making demands themselves, but they can also be instigated by other events and conditions both at work and beyond work (see Brief & Weiss, 2002, for a discussion of these). These affective states could have effects on the quality of decision making and problem solving, even though arising from sources quite independent of the demands of the decision. Therefore, taking a broader work stress perspective, especially one that does not ignore positive affective states, can inform our understanding of key executive behaviors in addition to their health and well-being.

I feel the need to make one more comment on the issue of executive job demands from a stress perspective, however. It is rare to find an occupation in which most of the incumbents do not argue that their jobs are stressful, and this is especially true among executives (Cooper, 1981;

Sutherland & Cooper, 1995). Somehow, we are not shocked to learn, for example, that over 98 percent of health care CEOs feel stressed and that 69 percent of them report that work-related stress "diminishes their overall productivity during the average day" (Lappa, 1989: 50). In fact, the notion that top executives are overstressed—and consequently at risk for heart attacks—is often repeated. Moreover, the idea that their decision-making responsibilities might be the worst stressors is as old as Brady's experiments with "executive monkeys" (Brady, Porter, Conrad, & Maso, 1958).

But from a mental and physical well-being standpoint, executives, as well as others near the top of the organizational hierarchy, are considerably better off than those near the bottom. In fact, there is a clear "inverse social gradient" in mortality from coronary heart disease (CHD), with those in the highest occupational grades (e.g., administrators) having age-adjusted CHD rates that are significantly lower than those in the lower grades (e.g., clerical and support staff). Moreover, these effects appear to be mediated mostly by job demands (Bosma, Peter, Siegrist, & Marmot, 1998; Marmot, Bosma, Hemingway, Brunner, & Stansfield, 1997). Weiss (1971), by the way, demonstrated that Brady's monkeys suffered mostly from a lack of feedback about their decisions rather than from the burden of decision-making responsibility. Thus, it is difficult to make a strong case that executives are likely to be particularly stressed or overwhelmed by job demands or by the kinds of financial security stresses that some feel may be the most injurious (Brief & Ateih, 1987). This is all the more reason, in my mind, to focus our attention on the consequences of positive affect, only some of which might be associated with job demands.

Hambrick et al. have posed an interesting and important set of questions that I hope will inspire further theoretical development and research. This research has the potential not only to help us understand some key behaviors of executives but also promises to inform more fundamental questions in the broader decision-making literature. I completely agree with them that this is a "fruitful arena for discourse and collaboration between scholars who emphasize individual-level issues . . . and researchers whose interests are in overall organizations" (p.

487). I offer these comments as a first step in such collaboration.

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