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Feeling energetic at work: On vigor's antecedents^{1,2}

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Vigor refers to individuals' feelings that they possess physical strength, emotional energy, and cognitive liveliness, a set of interrelated affective states experienced at work. This chapter focuses on vigor's antecedents and enabling organizational processes because vigor was found to positively predict employees' good health and proactive behaviors. Following a description of the conceptual framework of vigor and a review of past studies of vigor, I present a theoretical model, based on the conservation of resources theory, which presents hypothesized work-related potential predictors of vigor. In the discussion section, I describe a dynamic perspective to theorizing on vigor. I conclude by suggesting several open research questions that concern the study of the antecedents of vigor at work.

Feeling invigorated connotes the combined feeling of a positive energy balance and pleasantness or contentment. Someone who feels tense,

angry, or anxiously aroused may feel energized but this feeling is coupled with unpleasantness and displeasure, unlike feeling vigorous. The focus on vigor is congruent with recent calls that researchers study human strengths and positive psychological capacities (Peterson & Seligman, 2004; Seligman, Steen, Park, & Peterson, 2005). This focus is also in tune with the emergence of positive organizational behavior, which emphasizes positive traits, states, and behaviors of employees in organizations (Bakker & Schaufeli, 2008). Vigor has not yet been theoretically modeled in terms of its antecedents and consequences (for an exception, see Shirom, 2004).

The construct of vigor, referred to by other names but basically representing one's affective experience of being energetic physically (having physical strength), mentally (feeling cognitive liveliness), and interpersonally (possessing emotional energy relative to significant others), is





quite ancient. Theories of traditional Chinese medicine view the human body as having natural patterns of energy flows, or qi (in Japan, ki), that circulate in the body in energy channels called meridians. Energy flow in the body, according to Chinese philosophy, represents the interaction of yin and yang (or earth and heaven) as two opposing and, at the same time, complementary aspects of any one phenomenon. Furthermore, the ancient Japanese cultural traditions used the concept of ki as representing one's feelings of being able to mobilize mental and physical energy (Peterson & Seligman, 2004, pp. 274–277). Psychoanalytic thought, including the contributions of Freud, Jung, and Perls, emphasized the construct of psychic energy, mostly arguing that it could be lost (e.g., by investing it in defense or conflicts) or gained depending on how one invests it. In contrast with Eastern philosophies and psychoanalytic thought, I view vigor, following positivism as a scientific approach, as an inherently measurable construct.

Why is vigor considered as an affective state? Following past research (e.g., Elfenbein, 2007; Fisher, 2000), I use the term affect to refer to both emotions and moods – two relatively distinct types of affect. The concept of mood tends to be fuzzy because in most definitions neither the duration of the mood nor its degree of stability is clearly defined (Russell, 2003). Some authors (e.g., Reizenzein & Schimmack, 1999) define “affect” as a term covering emotional experiences and related feelings covered by typical mood questionnaires; as described below, many mood questionnaires included vigor as a component, focusing on physical strength and sometimes on cognitive liveliness also. I consider vigor as closer to a mood state in that it lasts longer than momentary emotions; however, because it is contextualized in the work situation, and because it was found to be associated with specific work-related enablers (see below), I refer to it as an affect. The practice of investigating moods and mood-like feeling states as affects is common in the literature (e.g., Fisher & Ashkanasy, 2000; Tsenkova, Dienberg Love, Singer, & Ryff, 2008).

The chapter is organized in four sections. The first section explains the reason for studying

vigor, and it is followed by a section which provides a brief summary of past conceptual approaches to it and measures constructed to assess it. The next section depicts a theoretical model, based on the conservation of resources (COR) theory, which specifies vigor's work-related enablers. I conclude by suggesting avenues for further developing the theoretical model and by pointing out a few open research questions in the study of vigor.

Why study vigor? Vigor, individuals' health, and organizational effectiveness

Why is the scientific study of vigor important? Most people want to feel energetic and view it as a significant dimension of their affective experiences. For example, it was found that a major reason people engage in physical activity is to experience vigor (Hansen, Stevens, & Coast, 2001; Reed & Ones, 2006). Additionally, because vigor constitutes a positive affect, reasons discussed in the literature for studying positive affective states (e.g., Lyubomirsky, King, & Diener, 2005) apply to vigor as well. As indicated below, vigor was found to be associated with highly important individual health outcomes and it is expected to be linked to organizational effectiveness. The following sections present evidence that supports these arguments, starting with the relationship between vigor and any motivational processes in organizations.

Vigor and motivation

Vigor, which reflects individuals' feelings concerning the energy reservoirs that they possess at work, is expected to predict job performance and organizational effectiveness because vigor is closely related to motivational processes at work. Work motivation is often viewed as a set of energetic forces that originate within individuals, energetic forces that determine the form, direction, and intensity of work-related behavior (Latham & Pinder, 2005). Thus motivational processes in organizations represent in part individuals' decisions to allocate energy over time from their energetic resources among different activities. Consequently, vigor could be regarded as a precursor of motivation at work (Forgas &





George, 2001; George & Brief, 1996). It follows that one could consider a certain threshold vigor as a prerequisite to any motivational processes in organization. Supporting this argument, it was found that when the mental representation of a behavioral goal is associated with positive affects, it automatically signals to the person that the goal is desired and worth pursuing and therefore promotes motivational activity designed to accomplish the goal (Custers & Aarts, 2005). Vigor, like most other positive affects, facilitates goal-directed behavior (Carver & Scheier, 1990) or approach behavior (Fredrickson & Joiner, 2002; Watson, 2002) and therefore could be expected to prompt individuals to engage with their job and work environment. Both qualitative and quantitative studies found that engaged employees, variously defined, have high energy (cf. Bakker & Demerouti, 2008)

Vigor, job performance, and organizational effectiveness

Why do I expect vigor to be positively related to organizational effectiveness and individual job performance? Several emotion theorists have argued that certain affective states are associated with specific action tendencies (e.g., Frijda, Kuipers, & Schure, 1989; Lazarus & Cohen-Charash, 2001), and vigor is expected to be associated with a positive action tendency. Fredrickson (2002), in her broaden-and-build model of positive emotions, has argued that positive emotions are accompanied by augmented thought–action repertoires, or an urge to think or act in a certain direction. It follows that feeling vigorous may generate a particular thought–action repertoire that expands activity, broaden the range of options, and promote creative solutions for work-related problems (cf. Fredrickson & Losada, 2005). Additionally, based on the above arguments, linking experienced vigor with motivation, vigor is expected to be positively related to job performance and organizational effectiveness. Another reason is related to the arguments, provided below, that vigor is positively associated with improved state of physical health, and to the evidence supporting this linkage. Better physical health could be

expected to increase the likelihood of vigor being associated with elevated levels of job performance (Côté, 1999).

While the theoretical arguments supporting the positive effects of vigor on performance and organizational effectiveness appear robust, there is a paucity of research investigating this proposition at work. There is, however, a wealth of research, recently reviewed (Boehm & Lyubomirsky, 2008; Tsai, Chen, & Liu, 2007), which suggests that happy people, or generally employees with high positive affect, display superior performance, perform more prosocial behaviors at work such as helping others, and generally are better organizational citizens. Also, there is evidence indicating that successful transfer of positive moods among team members led to greater cooperation among them and to augmented team performance (Barsade, 2002). Boehm and Lyubomirsky (2008) reviewed longitudinal evidence indicating that happiness often precedes enhanced levels of career success and elevated levels of job performance, and also experimental evidence suggesting that the induction of positive affect led to improved workplace outcomes. Also, a recent meta-analytic study found that job satisfaction is more likely to predict subsequent performance rather than the reverse (Riketta, 2008), providing support, albeit indirect, to the hypothesis that vigor is a precursor of high levels of job performance or effectiveness.

I assume that the body of findings on the relations between positive affect and performance is relevant to the case of vigor. This assumption is supported by the body of studies that found vigor, as assessed by the Profile of Mood States (POMS) vigor subscale or by vigor subscales of mood inventories based on the POMS, to predict sports performance (Beedie, Terry, & Lane, 2000) and academic performance (Lane, Whyte, Terry, & Nevill, 2005; Thelwell, Lane, & Weston, 2007). In a recent study (Salanova, Agut, & Peiro, 2005), relative to the other subscales of the Utrecht Work Engagement Scale (UWES) only the subscale of vigor was found to be positively and significantly associated with customer-rated performance in 114 service units, with $r = .15$;





however, this effect-size represents data aggregated across the work units and not individual level data. Expanding the domain of job performance to include contextual performance – defined to include prosocial and organizational citizenship behaviors – then several studies found positive affect coupled with energetic arousal to be associated with helping co-workers, spreading goodwill, and creative and innovative behaviors at work (for a review of these studies, see George & Brief, 1992). For example, a study of 221 salespeople (George, 1991) found a measure of high positive mood, largely based on items corresponding to above definition of the physical strength facet of vigor (e.g. feeling active, strong, peppy, elated), to significantly and positively predict both extra-role and role-prescribed prosocial organizational behaviors. The effects of vigor on performance could be mediated by variables such as one's self-efficacy and coping resources. A recent study found that positive mood states that included vigor predicted task performance indirectly through social support, self-efficacy, and task persistence (Tsai, Chen, & Liu, 2007). It could also be that the unidirectional effects flow from behavior to the experienced affect of vigor, as when a certain behavior is chosen because it breeds feelings of vigor.

Physical and mental health

The broaden-and-build model of positive emotions, frequently used in the area of positive affect and health, proposes that positive emotions, like happiness, joy, pride, and love, have health-protecting physiological effects (Fredrickson, 2002; Tugade, Fredrickson, & Feldman Barrett, 2004). The enhancing effects of positive feelings on physical health and longevity are supported by an accumulating body of evidence (Pressman & Cohen, 2005; Rozanski, Blumenthal, Davidson, Saab, & Kubzansky, 2005).

Individuals' level of vigor may be considered as an indicator of their optimal psychological functioning. Indeed, many investigators defined the conceptual domain of health-related quality of life as including vigor. A salient example is the construct of work engagement, defined as a

positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Bakker & Demerouti, 2008). Vigor, as one of the three components of the UWES, was defined to include items such as: "At my work, I feel bursting with energy", and "At my job, I feel strong and vigorous". As demonstrated by other chapters in this volume, the UWES is used in several countries. Yet another salient example is the operational definition of well-being by the World Health Organization (WHOQOL Group, 1994); as used in their questionnaire, it includes items like "I feel energetic", "I feel active", "I feel vigorous", and "I wake up feeling fresh", items used in part in the measure of vigor described elsewhere (Shirom, 2004). In the same vein, one of the domains in the measure of the Health-Related Quality of Life (Stewart & Ware, 1992), a measure often used (e.g., Stewart, King, Killen, & Ritter, 1995) is vitality, represented by four items: feel tired (reverse-coded), have enough energy to do the things you want, feel worn-out (reverse-coded), and feel full of pep. Note that the most-often cited and used model of well-being is Ryff's six-factor model (cf. Ryff & Singer, 2006) which does not include vigor as a component. While vigor's likely effects on mental well-being are straightforward, its effects on physical well-being are more complex (cf. Edwards & Cooper, 1988).

Several studies found vigor to predict subsequently assessed indicators of physical health. Thus feeling vigorous and objective physical fitness (gauged based on functional capacity) were found to interact in predicting the change over time in self-rated health (SRH) among apparently healthy male and female employees – the higher the physical fitness, the more pronounced the effects of the initial levels of vigor on these changes in SRH (Shirom, Toker, Berliner, Shapira, & Melamed, 2008a). Another study (Shirom, Vinokur, & Vaananen, 2008b), which used structural equation modeling to analyze data of two sizeable samples of employees in Finland and Sweden ($N = 6188$ and $N = 3345$, respectively), found that feeling vigorous was positively associated with both self-rated health and subjective work capacity, controlling for





socio-demographic predictors. Emotional exhaustion, the negative antipode of vigor, was found in the same model to negatively influence the same indicators. This finding, cross-validated across two countries, provides strong support to the view that vigor and emotional exhaustion (representing the core component of burnout as assessed by the Maslach Burnout Inventory: see Taris, Le Blanc, Schaufeli, & Schreurs, 2005) have each unique and independent effects on indicators of subjective health (cf. Bakker & Schaufeli, 2008).

The above two studies (Shirom et al., 2008a; 2008b) used self-rated health because it was shown in several large meta-analytic studies to be a robust predictor of subsequent survival and mortality even after adjusting for a variety of risk factors (cf. Shirom et al., 2008a). What are the biological mechanisms that transmit the effects of vigor on self-rated health? While these mechanisms are unknown, they are likely to include the effects of vigor, as a positive affect, on enhancing the immune system's capacity to mount an effective response to challenges and the adoption of healthy life-style habits (cf. Rozanski & Kubzansky, 2005; Ryff, Singer, & Dienberg Love, 2004). Two recent studies provide empirical support to these pathways linking vigor with one's state of health. Vigor was found to be negatively correlated with several inflammation biomarkers (Shirom, Toker, Berliner, Shapira, & Melamed, 2006), thus suggesting that they could represent possible pathways linking vigor with improved physical health. In another study, Toker (2008) found that vigor predicted subsequent elevations of the intensity of exercise behavior among males and females.

This discussion of the reasons for focusing on vigor emphasized its unidirectional effects on organization- and individual-relevant outcomes. These reasons were provided in response to the question: why study vigor? The current chapter focuses on the antecedents rather than the consequences of vigor, and therefore the potential consequences of vigor were only briefly described without due attention given to possible mediators and/or moderated of the unidirectional effects

discussed above. Suffice to indicate that these unidirectional effects could be mediated and/or moderated by other variables, including cognitive reappraisal and self-regulatory processes (Elfenbein, 2007), coping strategies (Folkman, 2008), and physiological processes accompanying experienced vigor.

Conceptualizing vigor as an affect

Following past research (e.g., Elfenbein, 2007; Fisher, 2000), we use the term affect to refer to both emotions and moods as two relatively distinct phenomena. Moods tend to be longer lasting, often mild and relatively enduring affective states of uncertain origin, while emotions are more intense, short-lived, and have a clear object or cause (Brief & Weiss, 2002; Kelly & Barsade, 2001; Scherer, 2000). Vigor is closer to a mood state in that it was conceptualized as lasting considerably longer than momentary emotions, but because it is contextualized in the work situation I refer to it as an affect.

Based on Lazarus and Folkman's appraisal theory (1984, pp. 273–274, 284–285), I consider individuals' appraisals of their energetic resources as theoretically distinct from the feeling of vigor. In nature, these appraisals and the feeling of vigor probably appear conjointly, mutually affecting each other over time. The focus on vigor as an affect follows the cognitive-motivational-relational theory developed by Lazarus and his colleagues (Lazarus, 2001; Smith & Lazarus, 1993). This theory implies a discrete-category approach to affects, each having its own core relational themes and coping implications. Furthermore, it posits that conceptualizing the distinctive characteristics, antecedents, and consequences of each affective state enriches and extends our understanding of employees' attempts to survive and flourish in their work environment (Lazarus & Cohen-Charash, 2001).

COR theory (Hobfoll, 1989, 2002) categorizes individual resources into four kinds: objects (e.g., a house); conditions (e.g., seniority, tenure, marital relationship); personal characteristics (e.g., self-efficacy, optimism); and energies (e.g., money, expert knowledge). Why the focus, in the





conceptualization of vigor, on one's feelings concerning the three facets of energetic resources?

There were several theoretical reasons for the focus on the affective experiences of physical strength, cognitive liveliness, and emotional energy as the three facets constituting vigor. First, these three facets are individually possessed. Other energetic resources at work, like authority or autonomy, are clearly other-dependent. Second, COR theory, based on past empirical evidence (Hobfoll, 1989, 2002), posits that the more proximal a resource is to the self, the higher its saliency relative to resources distal from the self. Following this COR theory tenet, I argue that the three facets of vigor probably represent the three most salient domains of energy that humans possess, physical, emotional, and cognitive, relative to other types of energetic resources such as having a credit in the bank. Third, again based on COR theory, I hypothesize that the three facets of vigor facilitate the development and enable the gain of other resources. For example, emotional energy probably facilitates obtaining social support, and physical strength is probably instrumental in maintaining an improved state of health (Hobfoll, 2002). Fourth, the three facets of vigor represent types of affective states that are intrinsically valuable in their own right to most people, as documented below. In comparison, having money, as an energetic resource, is valued primarily as a means to obtain centrally valued ends (Hobfoll, 1998, 2002). Fifth, the three facets of vigor represent a coherent set that does not overlap any other established behavioral science concept, such as resilience, engagement, commitment, or potency, or any aspect of the self-concept, such as self-esteem and self-efficacy. Furthermore, this conceptualization of vigor clearly differentiates it from its likely consequences such as organizational commitment or job involvement. Additionally, there is empirical support for the tri-facet definition of vigor (Shirom et al., 2008a). For example, in a qualitative study (Shraga & Shirom, 2008) it was found that employees actually describe the three facets of vigor as components of their experience of vigor.

Other conceptualizations of vigor and its relations with other affective states

In contrast to burnout and anxiety, vigor is a component of the approach-oriented behavior facilitation system. This system, according to Watson (2002), directs organisms toward situations and experiences that potentially may yield pleasure and reward and facilitates the procuring of resources like food, shelter, and sexual partners – resources that are essential for the survival of both the individual and the species.

As an affect term, feeling vigorous has been included in many mood inventories, often in a cluster referred to as positive energy or energetic arousal (Burke, George, Brief, Roberson, & Webster, 1989; Thayer, 1989; Yik, Russell, & Barrett, 1999). In a study using multidimensional scaling analysis to categorize 48 descriptions of emotional states, vigor was found to represent a cluster distinct from neighboring clusters that loaded high only on either the dimension of pleasure or on the dimension of arousal (Russell & Steiger, 1982). It was identified as a distinct factor and therefore was measured by a distinct scale in the POMS (McNair, Lorr, & Droppelman, 1971). This POMS factor was subsequently re-validated (Cranford, Shrout, Iida, Rafaeli, Yip, & Bolger, 2006). I did not follow the conceptualization of the POMS' vigor scale for two major reasons. First, the items used in it (e.g., lively, energetic, full of pep, vigorous) do not reflect the aforementioned cognitive (cognitive liveliness) and interpersonal-emotional (emotional energy) facets of our conceptualization of vigor. Second, as empirically constructed, it includes adjectives that reflect other positive affective states, including happiness (e.g., feeling cheerful) and pleasantness (e.g., feeling carefree), found in past research (cf. Russell & Steiger, 1982) to load high only on the dimension of pleasure; therefore, there is some doubt regarding its construct validity.

In the studies using the POMS, results that concern the vigor scale have often been reported. In the area of sports psychology, a recent meta-analysis of studies that have used the POMS in association with either athletic achievement or athletic performance (Beedie, Terry, & Lane,





2000) found a moderate effect size between the POMS vigor subscale and performance outcomes. Studies that have used the POMS and its vigor subscale to predict physiological outcomes abound in the literature. For example, the vigor subscale was found to positively predict sleep quality (Bardwell, Berry, Ancoli-Israel, & Dimsdale, 1999), as well as shorter duration of recovery from injury (Quinn & Fallon, 1999). As Payne (2001) noted, different aspects of the construct validity of this scale have been extensively studied, but primarily with clinical samples such as cancer patients, drug abusers, and brief psychotherapy patients, with hardly any past use in work organizations.

A construct that, to a certain extent, overlaps with vigor is that of *vitality*, conceptualized as combining the subjective experience of being full of energy and of feeling alive or vital (for the original scale, see Ryan & Frederick, 1997). Vigor differs from vitality in that the latter construct includes also the components of feeling alive and vital and of feeling awake and alert. Yet another related construct, thriving at work (Spreitzer, Sutcliffe, Dutton, Sonenshein, & Grant, 2005; see also, Spreitzer, Lam, & Fritz, Chapter 10, this volume), was defined as a subjective experience that combines learning (i.e., greater understanding) and a sense of vitality (aliveness). Therefore, it hardly includes the core content of vigor, as defined above.

A frequently-used alternative conceptualization of vigor views it as a component of engagement and defines it as comprising a high level of energy, motivation to invest effort at work, and resilience (e.g., Hakanen, Bakker, & Schaufeli, 2006; Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002b). I argue that this conceptualization of vigor confounds high level of energy with its possible consequences, motivation and resilience, and therefore it was not adopted (cf. Shirom, 2004). In the instrument designed to assess vigor as part of the UWES (e.g., Schaufeli, Martinez, Marques Pinto, Salanova, & Bakker, 2002a; see also Schaufeli & Bakker, Chapter 2, this volume), out of six items, two refer to resiliency and one to an aspect of motivation. It should be noted that the short version of the

UWES, which comprises nine items, does not include the above three items tapping resiliency and motivation (Schaufeli, Bakker, & Salanova, 2006). Based on the above conceptualization of vigor, I argue that this specific affect can be experienced regardless of individuals' behaviors following encounters with adverse events – namely resilience (Jackson, Firtko, & Edenborough, 2007; Luthar & Brown, 2007). Furthermore, while vigor could be a prerequisite of motivation to invest effort at work, vigor as an affect and motivation belong to different conceptual domains.

The nature of the relationships between vigor, as conceptualized above, and the two constitutive components of the work engagement construct dubbed dedication and absorption represents an open research question. Kahn (1992) proposed that employees must feel that they have physical and emotional energies in order to be able to dedicate themselves to their work. It follows that feeling vigorous is a necessary precursor to dedication, as operationalized by the UWES. It is also possible that these relationships depend upon certain contextual factors. For example, it could be expected that vigorous employees would fully immerse themselves in their work and become absorbed by it only if they experience psychological safety, trust their superiors and enjoy procedural justice, as suggested by Kahn (1990).

Some measures of vigor as a mood state were based on the theoretical position that the pair of vigor on the one hand and fatigue, burnout or tiredness on the other hand represents bipolar affective states on the same dimension that cannot be experienced simultaneously. This theoretical position is reflected in the practice of reverse-scoring tiredness or fatigue items in the vigor scales to arrive at a total score representing the positive mood of vigor. This practice has been followed by several researchers who have assessed vigor either as a component of job-related affective well-being (Payne, 2001; Daniels, 2000), as a stress reaction (William & Cooper, 1998), or as representing energy, the polar opposite of exhaustion on the same dimension (Maslach & Leiter, 2008). In contrast, I argue for the





theoretical position that vigor and burnout are obliquely related and do not represent the extreme poles of the same dimensional continuum, perhaps with the exception of situations characterized by very high levels of stress (Reich & Zautra, 2002). This theoretical position rests first on the fact that the biological systems underlying approach and avoidance activations have been shown to be basically independent (Cacioppo, Gardner, & Bernston, 1999). Second, positive and negative affective states are physiologically represented in different systems (Davidson, 2000). Third, positive and negative affective states are known to have different antecedents (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), may function relatively independently (Davis, Zautra, & Smith, 2004), and are differentially represented in people's behaviors (Gendolla, 2000). Therefore, on theoretical grounds, it could be concluded that the relationships between positive and negative affective states is not bipolar but bivariate. Considerable support for this position has been provided by studies that found different across-time fluctuations of positive and negative affect (cf. Yasuda, Lawrenz, Whitlock, Lubin, & Lei, 2004), that the relationship between tension and energy self-ratings was not bipolar (Vautier, Steyer, Jmel, & Raufaste, 2005), and that suggested that the practice of reversed-polarity items to represent unidimensional constructs was associated with substantive methodological and interpretational problems (Herche & Engelland, 1996).

A theoretical model of vigor's antecedents

In the following model proposing vigor's antecedents, I follow COR theory (Hobfoll, 1989, 2002) in identifying potential enablers of vigor. COR theory's central tenets are that people have a basic motivation to obtain, retain and protect that which they value. The things that people value are called resources, of which there are several types, including material, social, and energetic resources. Hobfoll (1989, 2002) maintained that resources are those personal energies and characteristics, objects and conditions that are valued by individuals or that serve as the means for the attainment of other objects,

personal characteristics, conditions, or energies (Hobfoll, 2002). Examples of internal personality factors that are considered resources are optimism, self-esteem, and self-efficacy. Examples of external resources are employment, social support, and economic status.

Key assumptions

The proposed model is based on several key assumptions. First, I consider vigor as predicted primarily by work-based proximal energetic resources. This assumption is based on the fact that vigor is conceptually defined and measured as contextualized in the work domain. It does not preclude the possibility that genetic predispositions, socio-demographic variables, and personality traits could influence the levels of vigor. However, I argue that these influences are probably partially mediated by work-based proximal enablers of vigor. In the same vein, certain individual traits may predispose some individuals to feel vigorous more than others. The literature on dispositional influences on affective states may lead to the expectation that those high on the personality trait of extraversion (or positive affectivity) are more likely to experience vigor relative to those high on the trait of neuroticism (cf. Brief & Weiss, 2002). The proposed model, however, is based on the postulate that most people have the capacity to experience the feeling of vigor given the enabling work contexts.

The second assumption is related to the tri-faceted conceptualization of vigor. I argue that people feel ongoing changes in the physical, cognitive, and emotional energy levels that they possess and that these changes are related to specific positive features of their work environment and specific characteristics of their jobs. I assume that changes in physical, emotional, and cognitive energies are interrelated, because personal resources affect each other and exist as a resource pool – an expansion of one is often associated with the other being augmented (Hobfoll, 1999, 2002). Therefore, in the following discussion of vigor's antecedents, the focus will be on global vigor as the criterion.

The third assumption follows directly from the above discussion of the relationships between





vigor and its negative counterpart, burnout. As noted above, vigor and exhaustion (burnout) are considered as only obliquely related, represented by two dimensions of the multidimensional domain of affective states. Therefore, reducing the job-related predictors of burnout, such as work overload (Shirom, 2003), would not necessarily augment felt vigor among the employees concerned.

Work-related predictors of vigor

Employees' work-related affective states tend to reflect their appraisals of their on-the-job experiences. Organizations do not have a direct way of eliciting specific affective responses in their employees; this could be accomplished only via vigor enablers to become operative. In the following, I will discuss work features likely to increase the likelihood of employees feeling invigorated.

Job characteristics

In a qualitative study on the antecedents of vigor (Shraga & Shirom, 2008) we examined the fit of 107 situations and events described by 36 respondents as enablers of experienced vigor with one of the components of the job characteristics model (the JCM; Hackman & Oldham, 1974, 1980). The JCM components are job significance, job identity, skill variety, task autonomy/perceived control, and feedback from one's supervisor (Hackman & Oldham, 1974, 1980). Job significance describes the degree to which the job has an impact on other people, both inside and outside the work organization, or on the employing organization itself. The majority of the enablers (46%) belonged to this category. This major finding of our qualitative study is strongly supported by quantitative research. For example, the most potent predictor of vigor as assessed by the UWES was found to be organization-based self-esteem, most of whose items reflect high task significance (Mauno, Kinnunen, & Ruokolainen, 2007), and task significance was found (Saavedra & Kwun, 2000) to be the strongest predictor of activated pleasant affect as gauged by the Job Affect Scale (Brief, Burke, George, Robinson, & Webster, 1988).

Feedback from supervisors measures the extent

to which one receives information about the effectiveness of one's efforts from one's supervisor; 27% of the enablers belonged to this category. Achieved success on a job task was found in other studies to be associated with employees feeling energetic (Brown & Ryan, 2003; Ryan & Frederick, 1997). Task identity refers to the extent to which the job is an identifiable piece of work, possible to accomplish from beginning to end, and we found that 23% of the vigor enablers belonged to this category. Our respondents did not mention any enablers in the categories of skill variety (the degree to which the job requires the use of a number of different skills and talents on the part of the employee), task autonomy (the level of discretion the employee has in regard to the work process), and perceived control (the ability to influence the work environment). Task autonomy is a form of control limited to the employee's own job tasks, whereas perceived control is a broader term that includes aspects of the organization that may not be directly related to one's job (cf. Spector, 1997, pp. 43–44). The findings of our qualitative study suggest the job characteristics that directly enable employees to focus on a significant task having an identifiable core, characteristics likely to lead to positive feedback when a task at hand is successfully completed, are those most likely to enable the experience of vigor. Supporting our findings, in a series of experimental studies, experienced success simulating common work situations was manipulated and resulted in positive affective states, including vigor (Nummenmaa & Niemi, 2004). Additional support to the findings of the above qualitative study was provided by a diary study that found that daily attainment of goals at work was associated with activated pleasurable affect at the end of the working day (Harris, Daniels, & Briner, 2003). This set of findings, if confirmed by quantitative studies, indicate that different combinations of work characteristics predict vigor relative to other affective, attitudinal, and behavioral outcomes.

Job-related interactions with others

The strand of research on the ways people influence each other's mood states, which includes the





study of conceptually overlapping processes such as mood linkage (Totterdell, Wall, Holman, Diamond, & Epitropaki, 2004), emotional contagion (Neumann & Strack, 2000), and emotional crossover and spillover (Song, Foo, & Uy, 2008), indicates that employees influence each other's mood. This influence was found in the above studies to be independent of shared work events and circumstances but to be dependent on the extent to which employees interact with each other at work. Therefore, interpersonal processes which operate over a period of time at work may lead to employees' moods becoming linked. For example, a study that focused on the link between team-level and individual-level vigor found the former to impact the latter (vigor in this study was assessed as part of the engagement construct; see Bakker, Van Emmerik, & Euwema, 2006).

Leadership style

There are indications in the literature that leaders who feel energetic are likely to energize their followers (cf. Brief & Weiss, 2002). Displaying vigor is probably expected from employees in managerial roles (Church & Waclawski, 1998). In a similar vein, the leadership literature argues that transformational leaders often exhibit energizing emotions in order to arouse similar emotional states among their followers (Avolio, 1999). This literature suggests that intellectual stimulation, a component of transformational leadership which consists of encouraging followers to think creatively (Avolio, 1999), is likely to have a direct positive effect on cognitive liveliness, a component of vigor.

Group-level resources

Work groups tend to share emotions because of common socialization experiences and common organizational features, norms and regulations that govern the expression of emotions, task interdependence, and the phenomenon of emotional contagion (Brief & Weiss, 2002). Work teams characterized by mutual trust and high social support tend to be more cohesive and goal-directed, and these qualities, in turn, lead to favorable employee morale and job-related well-being (Karasek & Theorell, 1990). Specifically,

work group cohesion was found to predict vigor, measured as a mood state (Terry et al., 2000).

Organizational resources

Employee participation in decision making has the potential to increase one's exposure to many sources of information, enhancing one's ability to adjust more flexibly to the demands of diverse role partners, and enabling one's capability to develop cognitive skills like finding creative solutions that integrate diverse viewpoints (Spector, 1986).

Directions for future research

The suggested focus on vigor is in tune with the new development of the field of positive psychology (Seligman et al., 2005) and the emergence of positive organizational behavior (Luthans, 2002; Luthans & Youssef, 2007). Vigorous feelings at work possibly allow employees to effectively cope with work-related demands, and more importantly are likely to have a positive impact on their well-being. There are several promising paths of research which could increase our understanding of the antecedents and etiology of vigor at work.

A dynamic perspective on vigor's possible antecedents

A major limitation of the proposed model of the antecedents of vigor is its static nature. I propose that transforming the model to one that is based on a dynamic perspective is perhaps the most promising path for future research. Like other affects, vigor should be considered as an ongoing process which begins with a focal employee, who perceives a situation or a condition, finds it meaningful, experiences a feeling state and possibly also physiological changes accompanying it, and then changes his/her attitudes, cognitions, or behaviors following the experienced vigor. For each stage of the process, the focal employee could exercise self-regulation processes. For each stage of the process, it is possible to envision feedback-loops operating at the intra-individual, inter-individual, individual-group and individual-organization levels of analysis. Thus the model presented above is but a first approximation of





considerably more complex dynamics (for an attempt to construct this model for affective states, see Elfenbein, 2007).

Several theoretical threads could help in this task of recasting the model proposed above in a dynamic mold. COR theory (Hobfoll, 2002) posits also that those with greater resources (e.g., higher levels of vigor or life satisfaction) are more capable of further resource gain. Conversely, those who lack resources (e.g., report high levels of burnout) are more vulnerable to further losses and less capable of resource gain. These loss and gain cycles occur over time (cf. Hobfoll, 2001). Fredrickson's (2001) broaden-and-build theory of positive affect posits that when they recur over time, they improve people's coping resources by broadening their thought-action repertoire – leading them to build a range of personal resources, including physical resources (e.g., good health and longevity), social resources, and psychological resources (e.g., resilience). There is some evidence supporting the theoretical proposition of an upward resource spiral triggered by positive affect (Fredrickson & Losada, 2005). Fredrickson and Joiner (2002) found that positive emotions broaden the scopes of attention and cognition and, by consequence, initiate upward spirals toward increasing emotional well-being. The augmented personal resources can be drawn on to cope with any work-related demand that may arise in one's job. In work organizations, little is known about this possible spiral of augmented personal resources.

Vigor and goal-directed behaviors

The study of vigor at work may offer new insights in the process of goal-directed behaviors, or the process by which employees initiate, regulate and maintain their task-related behaviors over time and over changing circumstances. DeSchon and Gillepsie (2005) proposed that goal-directed behaviors be viewed as specific manifestations of self-regulation efforts. Individuals self-regulate their behaviors to a considerable extent based on their feeling states, as documented above. One way of assessing the validity of the proposition that vigor is a prerequisite of goal-directed behavior is to examine these relationships over

time. Such a longitudinal study may also test the propositions that elevations in vigor lead to more effective coping with work-related demands.

There are several open questions awaiting empirical clarification with regard to using vigor in actual research. Are there individual differences in the ability to “intelligently” use vigor as a means of guiding and maintaining one's behavior? Feelings provide meaning to work-related employee experiences. In line with recent thinking on emotional intelligence, the ability to identify and regulate feelings and use the information provided by feelings is considered important for adaptive social behavior (Salovey, Mayer, Goldman, Turvey, & Palfai 1995). If such differences are found to exist, do they reflect differences in the above skills, and can these skills be learnt (Salovey, Bedell, Detweiler, & Mayer, 2000 & Mayer, 2000)? Emotional intelligence represents just one, albeit important, possible modulator of vigor's relationship with behavioral responses.

Another open question has to do with the effects of vigorous feelings at work on organizations. In this chapter, the emphasis has been on job and work characteristics conducive to employee vigor, and on the influence of employee vigor on job performance. However, how does employee vigor affect the organization as a whole? Are there vigorous organizations, and if so, what are their inherent characteristics? Vigorous organizations could be regarded as organizations whose managerial apex effectively created the conditions that generate, foster and maintain employee vigor throughout the organization and mobilized these energetic resources in the pursuit of organizational effectiveness. Based on emotional and cognitive contagion processes (Barsade, 2002), organizational vigor probably reflects the synergistic accumulation of individual employees' level of vigor. Vigorous organizations could be expected to be highly innovative, proactively adjust to environmental changes, and otherwise distinguish themselves in their product and labor markets (Bruch & Ghoshal, 2003; Cross, Baker, & Parker, 2003).

Vigor may be experienced as an affective response to events and situations that individuals





encounter outside of work. It is possible that vigor felt at work spills over to the family and other life domains and vice versa. These are open questions that need to be addressed in future research. The same is true regarding the possible reciprocal relations between vigor and job performance or proactive behavior in organizations.

Vigor represents an affect experienced at work. While available research on vigor at work is in its infancy, existing research on vigor as a mood state would suggest that it is strongly related to individuals' well-being and health. The link proposed above between vigor and physical health, indirectly supported by the body of studies that have examined positive affect-physical health relationships, indicate that additional research on vigor at work may provide an understanding of possible pathways by which organizations can reduce absenteeism and health-care costs. Therefore, there exists a need for future research on vigor at work.

Notes

1. I would like to acknowledge the financial support of the Israel Science Foundation.
2. The scale constructed to gauge vigor is available for downloading in Word format in several languages, including English: www.shirom.org or: www.tau.ac.il/~ashirom.

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