

Occupational Stress:

Issues and Developments in Research

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Differentiating between Daily Events, Acute and Chronic Stressors: A Framework and its Implications

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1. Introduction

There has been a tremendous increase in research on work stress in the 1980s. This is apparent in the increasing focus on stress in the areas of social, cognitive and clinical psychology (Staw, 1984). Paralleling this focus is an emphasis on the prevention (Levine, 1981) and treatment (Mancuso, 1983) of stress in organizations, and the appearance of a new journal devoted solely to stress in the workplace (*Work and Stress*). However, despite considerable research efforts on work stress, there remains little agreement about what stress is.

The first aim of this chapter is to address the confusion regarding the basic construct used in the stress literature. Secondly, a conceptual framework which provides guidelines by which to distinguish between different types of stressors will be advanced. Some implications of this framework (i.e., the nature and timing of outcomes, the use of coping resources, and methodological issues such as the use of different designs and measurement techniques) will be discussed. Without a specific prior conceptualization of the nature of a construct, any investigation involving that construct remains questionable (Cook and Campbell, 1979).

The term 'stress' has been conceptualized in several fundamentally different ways (Cooper, 1983; Duckworth, 1985):

1. As an organism's response to a demand or to events that challenge it (Selye, 1936; *et al.*, 1964).
2. As an event external to the individual that places demands on him/her (Kahler, 1975).
3. As a characteristic of the environment that poses a threat to the individual (Caplan, 1975).
4. As a state which results from a misfit between a person's skills and the demands placed upon him/her (person-environment fit) (French *et al.*, 1974; McGrath, 1975).

Another criticism of the definition of stress is that it is too broad a construct (Duckworth, 1985). As an example of this criticism, stress has been defined as a condition in which an individual is confronted with an opportunity, a constraint, a demand to be/have/do what is desirable where the successful resolution is uncertain yet highly valued by the individual (Schuler, 1980).

Certainly, 'stress' is a term beset with conceptual confusion (Winnubst, 1984), which is partly due to this lack of definitional and operational agreement (Beehr and Newman, 1978; Chesney and Rosenman, 1983; Glowinkowski and Cooper, 1985). If we do not know exactly what is meant by the term 'stress', resulting problems with construct validity will both hinder the construction of measures of stress, and weaken the validity of conclusions drawn in studies employing such measures. Under such conditions, it is questionable whether the understanding, prediction and/or control of 'stress' in its consequences is possible.

Several theories propose factors that are 'stressful'. One theory suggests that lack of control, unpredictability and/or uncertainty lead to stress (Spacapan and Cohen, 1983; Thoits, 1983). Another theory suggests that change results in stress (Jackson *et al.*, 1983; Werbel, 1983). Beehr and Newman (1978) believe that stress results when environmental factors interact with a person such that the person is forced to deviate from normal functioning. Others state that stress results if the individual cognitively appraises or defines the situation as stressful (Redfield and Stone, 1979; Cooper, 1983; Fleming *et al.*, 1984). Yet none of the factors that supposedly lead to stress can be determined until there is a precisely defined, uniform conceptualization of what stress is.

2. Stress, stressor, strain

Stress, stressor and strain are three terms commonly used in the stress literature. These terms are both theoretically and practically useful. However, there is a great deal of confusion and overlap in the meaning of these three concepts.

For our purposes here, the definitions presented by Kahn *et al.* (1964), and followed by Eden (1982), will be employed, as they clearly differentiate between the three concepts in question. The term 'stressor' refers to 'objective stress', those objective characteristics of the environment that impinge on the perceptual and cognitive processes of normal individuals, "... these events are verifiable independently of the individual's consciousness and experience" (Eden, 1982, p. 313). 'Stress' is defined as "those properties of the environment as they are experienced by the person and represented in his consciousness" (Eden, 1982, p. 313). 'Strain' is "an individual's maladjustive psychological and physiological response to stress" (Eden, 1982, p. 313). In sum, stressors are objective environmental events, stress is the subjective experience of the event, and strain is the person's psychological and/or physiological response to stress (the outcome).

There is frequent confusion in the literature concerning the meaning of these three constructs. For example, in a study of depression and coping, Billings and Moos (1984) concluded that role *strains* and life *events* were associated with dysfunction in depressed individuals; strains supposedly leading to the outcome (dysfunction). In other studies strain is believed to be the outcome (Eden, 1982; Cooke and Rousseau, 1983). Hendrix *et al.* (1985) imply that *stress* is both the antecedent of the outcome itself. Also, psychological reactions 58 months after the Three Mile Island accident have been called 'chronic stress' (Davidson and Baum, 1986) instead of psychological strain, while Loo (1986) talks of *stress* reactions as the outcome of acute work events.

The same stressor (environmental event) may affect different people in different ways and to varying degrees (Redfield and Stone, 1979; Selye, 1983), as the potential impact of a stressor is dependent upon how it is perceived and appraised by the individual (Duckworth, 1985). Therefore, it is as important to understand how an individual perceives and responds to an event, as it is to understand the qualities of events themselves (Redfield and Stone, 1979). Although the appraisal of a stressor, any outcome thereof, is important, it is not an issue that will be discussed further. We shall focus on a more precise conceptualization of stressors only. Stress and strain, although as important, are dependent on prior stressors. Consequently, an adequate basis for the understanding of stress and strain remains dependent on a clearer conceptualization of stressors.

3. Differentiating between psychological stressors

This chapter attempts to differentiate between types of stressors mentioned in the literature, including acute and chronic stressors, daily events, minor life events and disasters. Distinguishing between these types of stressors is important as they result in different outcomes (Payne *et al.*, 1982; Keenan and Newton, 1985; Caspie 1986), necessitate different coping strategies (Payne *et al.*, 1982), and require different methodologies for their investigation (Eden, 1982; Werbel, 1983).

Some researchers do distinguish between different types of stressors (Eckenrode, 1984; Payne *et al.*, 1982; Werbel, 1983), but they are not the majority (Cooper, 1982) in a decade review (January 1976 - December 1985) of all articles on work stress in journals* showed that, with few exceptions, little or no mention is made about the specific nature of the stressor under investigation. Even when a specific type of stressor is investigated, there are few definitions of the type of stressor measured. For example, Keenan and Newton (1985) state that they measured acute stressful work events rather than chronic work stress, but at no point is a definition of acute or chronic stress offered. Also, Payne *et al.* (1982) point to the importance of distinguishing between the terms 'acute' and 'chronic', but do not offer any definition or explanation of what they mean by these terms. Eckenrode (1984) studied the relative effects of minor events, chronic and acute stressors on mood. Again, no definitions of chronic or acute stressors are provided.

Even when different types of stressors are distinctly defined, clear conceptual differences between the types are not always provided. For example, by definition, acute stressors are conceptually distinct from other types of stressors, yet have been equated with chronic stressors (Fleming *et al.*, 1984), and with minor life events (Stone, 1982; Monroe, 1983).

Also, there is much overlap in the examples provided of the different types of stressors. For example, across different studies, role conflict, role overload and

*All articles on work stress in *Journal of Applied Psychology*, 13 articles, *Journal of Personality and Social Psychology*, 17 articles, and *Organizational Behavior and Human Performance*, 7 articles covering the period January 1976 - December 1985 were examined.

ambiguity have sometimes been described as chronic stressors (Werbel, 1983; Billings and Moos, 1984) and elsewhere as acute stressors (Keenan and Newton, 1985). Similarly, uncertainty, crowding and noise have been classified as both chronic stressors and daily hassles (Fleming *et al.*, 1984).

The above examples portray the current confusion in definition and usage of acute and chronic stressors. ** Not only is a precise conceptual and operational distinction between chronic and acute stressors and daily events needed (Eden, 1982; Payne *et al.*, 1982), but also further conceptualization of the differences and similarities between all types of stressors is required. Recognition of this need is not new (Eden, 1982; Payne *et al.*, 1982; Eckenrode, 1984) yet a distinct conceptualization of types of stressors remains elusive in the literature.

4. Current definitions of the different types of stressors

Although the following definitions are currently used in the stress literature, they are often not precise enough to be useful in differentiating between the different types of stressors. In the stress literature it is implied that acute stressors are most readily distinguishable from the others. The term 'acute' is defined as "severe but of short duration" (Guralnik, 1984, p. 15). Acute stressors are said to involve change (Werbel, 1983) and are frequently equated with life events (Fleming *et al.*, 1984). Acute stressors have a more clearly defined time onset (Eckenrode, 1984) and their intensity decreases over time (Werbel, 1983).

'Chronic' is defined as 'lasting a long time or recurring often' (Guralnik, 1984, p. 254). Chronic stressors are those "aspects of the environment that are demanding on an ongoing and relatively unchanging basis" (Eckenrode, 1984, p. 911). They have a less clearly defined time onset (Eckenrode, 1984) and their intensity remains constant over time (Werbel, 1983).

Daily hassles are defined as "irritating, frustrating, distressing demands that to some degree characterize everyday transactions with the environment" (Kanner *et al.*, 1981, p. 3). Daily hassles are "experiences and conditions of daily living that are appraised as salient and harmful/threatening" (Ivancevich, 1986, p. 40). Their counterpart, daily uplifts, are defined as positive experiences that are appraised as favourable to a person's well-being (Kanner *et al.*, 1981).

Minor life events are more mundane, less severe life events (Stone and Neale, 1982). Minor life events (Stone and Neale, 1984a) and daily hassles and uplifts (Kanner *et al.*, 1981) are different terms offered by different researchers to represent the same idea. There is agreement that minor life events are conceptually equivalent to a combination of daily events. Here we will use these terms interchangeably.

Work-related disasters (Chisholm *et al.*, 1983) and crises (Hoiberg and McCaughey,

** In selecting studies on a non-random basis throughout this chapter to illustrate what we believe are critical issues, we do so fully aware of the fact that there are many other studies that make the same, or similar, errors of omission or commission. Our point is not to suggest that some individuals have an exclusive right to these problems, but rather to illustrate their pervasive nature.

1984) should also be mentioned. Most researchers assume that disasters or crises are most intense stressor possible, and are also time-bound in nature.

Based on a literature review, a more precise conceptualization of the different types of stressors can be presented. Stressors can be differentiated depending on how they vary in four orthogonal dimensions: specificity of time-onset; duration frequency repetitiveness; and severity.

Acute stressors always have a specific time onset, are of short-term duration, occur very infrequently, and are of high intensity. Examples include getting fired or laid (Stone and Neale, 1982), a strike (Barling and Milligan, 1987), job transfer (Sarason and Johnson, 1979), and involvement in a shooting, for example, for police officers (Lundberg, 1986).

Chronic stressors have no specific time onset, are repeated frequently, may be short or long duration, and may be of high or low intensity. It is usually difficult to determine the time of onset of a chronic stressor. Examples of long-term, chronic stressors are role conflict and ambiguity, job insecurity and noise in a manufacturing plant.

Minor life events or daily events have specific time onset, are of short-term duration occur infrequently, and are of low intensity. Examples of daily events are a disappointment, getting caught up in traffic (Stone and Neale, 1982), experiencing difficulty with a client, losing or misplacing things (Kanner *et al.*, 1981). Although the same daily events may occur again in the future, they do not occur repeatedly at the same point in time such as constant noise in the workplace (a chronic stressor). Whether a daily event represents an uplift or a hassle depends on the subjective appraisal of the event and is beyond the scope of this chapter.

Disasters have a specific time onset, are of either a short- or long-term duration occur extremely infrequently, and are of high intensity. Unlike acute and chronic stressors and minor life events, disasters have also been classified along other dimensions, namely the threat to life, prolonged suffering, the scope of the impact, and also the way in which the event influences an entire community (Green *et al.*, 1984).

As mentioned previously, these four dimensions, viz., specificity of time onset, duration, frequency and intensity) vary independently of each other. If a stressor occurs frequently, this does not imply that the stressor is more intense or severe; a high frequency stressor is not to be equated with a high intensity stressor. For example, an accumulation of different acute events is sometimes equated with a chronic stress (Holmes and Rahe (1967) mathematically combine different life events (acute stressors) and conclude that together they are equivalent to a chronic stressor. However, an acute stressor, by definition, is a single event of high intensity that occurs very infrequently whereas a chronic stressor is a single event of high or low intensity that occurs repeatedly. An accumulation of different acute events that occur infrequently over time should not be equated with chronic stressors (similar stressors that occur repeatedly). Their intensities may be comparable, but chronic and acute stressors still differ according to the specificity of time onset and frequency of occurrence.

A similar misunderstanding surrounds daily events. It is assumed that when different minor life or daily events are summated they have a higher intensity, and therefore may be equated with chronic stressors (Kanner *et al.*, 1981; Eckenrode, 1984). It

intensity of summated daily hassles may reach the intensity level of chronic stressors, but daily hassles and chronic stressors still differ on the specificity of timing of onset and frequency (the same daily hassle occurs very infrequently, whereas a chronic stressor is one that occurs repeatedly).

5. Implications of poor construct validity

Previous failure to distinguish between the different types of stressors has resulted in poor construct validity and affected the development of reliable and valid instruments measuring work and/or life stressors. Several difficulties with many scales used to measure stressors can be identified. Such difficulties include confounding the measurement of the stressor with either the outcome (symptoms of psychological strain) or with other types of stressors; failure to measure responses of those individuals who experience stressors yet do not suffer any strain; and the averaging of scores over a certain time period and assuming the averaged scores represent a different *type* of stressor than the initial instrument was designed to measure.

Measuring minor life events

The Hassles Scales and the ADE

It is difficult to justify the use of many of the items included in either the Hassles Scale or the Assessment of Daily Experiences (ADE; Stone and Neale, 1982), which share many similar or identical items (e.g., sickness/health of a family member; general housework/home maintenance; fired, quit, resigned or laid off from work or out of a job; emotional interactions with co-workers/employees). Both scales confound daily hassles (Kanner *et al.*, 1980) or daily events (Stone and Neale, 1982) with major life events (Monroe, 1983). Major life events that make up some of the items of the scales (i.e., laid off from work, health of a family member) may increase the risk of experiencing a greater frequency of daily hassles (i.e., misplacing or losing things, social obligations), but do not represent daily hassles in and of themselves. In addition, neither scale is able to measure responses of individuals who experience 'daily events' but are not bothered by them (Dohrenwend and Shrout, 1985; Cohen, 1986; Flannery, 1986). The event cannot be recorded as a hassle using the Hassles Scale, thereby confounding stressors with stress. Many of the items of the Hassles Scale reflect chronic stressors rather than daily hassles (i.e., not enough money for housing, health of family members, thoughts about death, concerns about job security, the meaning of life, debts). It has also been suggested that the Hassles Scale in particular confounds daily hassles with psychological disorder. Many items appear to be more directly related to psychological problems (i.e., trouble relaxing, not getting enough sleep) than to minor everyday difficulties (i.e., planning meals, home maintenance) (Monroe, 1983; Dohrenwend and Shrout, 1985; Depue and Monroe, 1986).

As with the Daily Hassles Scale, checklist scores of the ADE are summed and averaged over several days, the exact number of days being dependent on the particular

study. For example, on one study responses were recorded daily but aggregated at end of a 1-week period (Stone, 1981). The aggregated occurrence of events was used in calculating the correlation between daily events and mood (Stone, 1981). It is very similar to the Holmes and Rahe (1967) procedure where events are summed over a specific time period and their cumulative impact on different indices of well-being is assessed. Conceptually, as mentioned previously, the occurrence of different events summed over a time period does not result in the same type of stressor as occurrence of the same events summated over a specific time period. The summation of the same events would constitute a measure of chronic stressors, whereas a summation of different events would simply represent an aggregate of daily hassles.

The Industrial Relations Event Scale

Bluen and Barling (in press) developed the Industrial Relations Event Scale (IRE) to assess acute stressors involved in the industrial relations process. Respondents indicate events that occurred during the previous 12 months, and rate their positive or negative impact. The items are supposed to represent acute industrial relations stressors, items such as 'job insecurity' and 'injustice and inequality' may be better indicators of chronic stressors. Other items of the IRES may be more representative of daily hassles than acute stressors: 'being disciplined', 'representing others', 'problems with accommodation, transport, school, etc.'

The Organizational Change Inventory

This measure is designed to assess changes in the work situation (Sarason and Johnson, 1979). Respondents indicate which events they have experienced and rate their impact on a scale from -3 to +3. The summed positive and negative ratings are used to indicate the extent of the desirable or undesirable change required within a specific work environment. The items comprising this scale (e.g., promotion, transfer, supervisor, reduction in pay, strike) seem to measure what the authors devised as an instrument to measure. The items measure acute work events and do not confuse them with chronic stressors or daily hassles.

In general, current scales purporting to assess psychological stressors all require more precise stipulations as to what type of stressor they are intended to measure. Until this requirement is met, their continued usefulness may be limited. As the reason to question exactly what the above scales measure, any results obtained using these instruments remain questionable.

6. Some implications of refining work stressors

Achieving greater differentiation between types of stressors would allow the examination of several new issues. These include the possibility that different types of stressors are associated with different outcomes, that different methodologies are required

study different types of stressors, that the time lag in the stress/outcome relationship depends on the nature of the stressor, and that different coping mechanisms are required for different stressors.

Methodology unique to the type of stressor

The idea that longitudinal analysis is mandatory for a comprehensive understanding of stress and its consequences is not new (Cooper and Marshall, 1976; Schuler 1980; Payne *et al.*, 1982; Stone and Neale, 1984b; Barling and Rosenbaum, 1986). For example, effects of stressors not found cross-sectionally may still be manifest longitudinally (cf. Helmreich *et al.*, 1986). Nonetheless, longitudinal analyses of stress/outcome relationships remain extremely rare (Beehr and Newman, 1978). Along with the need for longitudinal designs, there may also be a need for more idiographic and specific analyses, such as a time series analysis (Eden, 1982) or a facet approach (Beehr and Newman, 1978; Shirom, 1982), with the type of analysis dependent on the type of stressor involved.

Measuring daily experiences may demand a small sample size. On the other hand, studying chronic stressors may require a larger sample. The effects of daily events might be better measured once a day over a period of a couple of weeks. Acute stressors may be better understood with a before-after or during-after type design, where effects are investigated in both the presence and the absence of the stressor. Practical considerations often hinder such an approach, however. Often, the onset of an acute stressor (e.g., a strike) or disaster (e.g., an explosion, Barling *et al.*, in press) is unknown, so no pre-vent measure is available. On the other hand, chronic stressors may require fewer testing periods, with larger samples, when 'typical' events are recorded.

Differential outcomes

The duration of the stressor may be an essential factor in determining its outcome (Beehr and Newman, 1978; Payne *et al.*, 1985). For example, Keenan and Newton (1986) suggest that the most common response to an acute stressor may be anger, whereas the most common response to a chronic stressor may be anxiety. Also, chronic stressors may incur more negative and costly effects than acute stressors (Fleming *et al.*, 1984).

Researchers investigating the effects of stressors on mood sometimes discover stressor-specific effects. For example, severe daily events (Stone and Neale, 1984a) and daily hassles (Eckenrode, 1984) affect same-day mood (Stone and Neale, 1984b), but acute stressors do not (Eckenrode, 1984).

When psychological symptomatology is the criterion, differential effects dependent on the type of stressor emerge. Kanner *et al.* (1981) concluded that aggregated daily hassles were a significant predictor of psychological symptom level, but acute stressors (as measured by life events) were not (Kanner *et al.*, 1981; Ivancevich, 1986). In a prospective study by Monroe (1983), minor life events (also labelled as 'hassles' by Monroe) were better predictors of subsequent psychological symptoms than were major life

events. Clearly then, a precise specification of the nature of the stressor is crucial. Studies seem to indicate that acute stressors may have fewer long term consequences than chronic stressors or daily hassles (Loo, 1986).

The short-term effects of disasters or crises usually become apparent soon after occurrence of the event (post-traumatic stress disorder), while long term consequences are not as fully understood (Hoiberg and McCaughey, 1984). Where the crisis people can be affected for up to two years (Chodoff, 1963; Lifton, 1963; Chisholm *et al.*, 1982), and possibly even six years after the event (Davidson and Baum, 1986). A study of employees at the Three Mile Island Nuclear Plant, Kasl *et al.* (1981) concluded that the crisis experienced by workers there had both a major and a long-lasting impact on their psychological well-being. The long-lasting strain on workers at TMI has been attributed to the underlying chronic stressors (long-term uncertainty as to what there has been any exposure to radiation) resulting from the disaster (Chisholm *et al.*, 1983). Thus, the duration and/or the intensity of the *strain* may be a result of the type of stressor.

Timing of outcome

The issue of the time lag between causally related variables remains one of the frequently neglected topics in industrial/organizational research (Campbell *et al.*, 1980). Also, the question of when the consequences of a stressor will become apparent, whether different stressors exert their effects at different time periods, remains unanswered. The timing of consequences of stressors may be contingent on the type of stressor present. Data suggest that minor life events and daily hassles have immediate same-day effects on mood, but do not affect mood of the following day (Eckenrode 1984; Stone and Neale, 1984b; Caspi *et al.*, 1986). Chronic stressors may have immediate long-term effects, whereas acute stressors may have effects lasting only as long as stressors themselves. In a study of police officers following a shooting incident, I (1986) showed that most of the consequences of acute stressors are manifest very soon after the event (in this case, within three days). After that, the strain became dissipative. Thus, a knowledge of the specific nature of the stressor enables a more precise prediction not only of the nature of the outcome, but also its duration. From this, better prevention and intervention strategies could be designed.

Different coping strategies for different stressors

Coping techniques may also be dependent on the type of stressor involved. Eckenrode (1984) suggests that one of the major differences between chronic and acute stressors is that acute stressors tend to result in a more specific set of time limited coping responses.

Personality hardiness (Kobasa, 1979) and social support (House, 1981; Cohen & Wills, 1985) are two coping resources that are frequently discussed in the literature. The event of an acute stressor, personality hardiness may be essential for adequate coping. An acute stressor has a sudden impact, is of high intensity and occurs

frequently. As such, it requires immediate coping. Because hardness is a personality resource that is stable over time (Kobasa, 1979), it may be present precisely when it is required to influence how one copes with the sudden impact of an acute stressor. Social support is a social resource whose availability and accessibility may require time. Thus, social support may be more helpful in coping with chronic stressors which, by definition, occur repeatedly. In a study of Israeli women whose husbands were called up for active duty at very short notice, personality resources, in the form of personal mastery, buffered negative emotional reactions (Hobfall and London, 1986). Social support exerted no immediate effect on those trying to cope with the acute stressor presented in this situation. Because of the central role that coping strategies fulfil in ensuring that stressors do not inevitably result in psychological strain, the issue of whether the benefits derived from coping mechanisms are stressor specific should be investigated further.

7. Conclusions

To advance the understanding of work stressors, we must first take a step backwards. This chapter argues for such a step. Before we can understand issues such as the nature and timing of the consequences of psychological stressors, or the coping mechanisms necessary to avoid any negative effects (i.e., strain) arising from such stressors, a clearer perspective of the specific methodologies required to measure the different types of stressors is needed. The specific methodologies required will result only when the different types of stressors are clearly defined and delineated from one another. The implementation of intervention strategies aimed at combatting stressors will be made possible only after all the above issues are clarified.

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