



## **Editorial**

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### **Let's study how worker health affects the psychosocial work environment**

by [van Hooff MLM](#), [Taris TW](#)

**Affiliation:** Radboud University, Behavioral Science Institute, Nijmegen, The Netherlands. [M.vanHooff@psych.ru.nl](mailto:M.vanHooff@psych.ru.nl)

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## Let's study how worker health affects the psychosocial work environment

Over the last three decades, a large body of research has addressed the associations between the psychosocial work environment and work stress on the one hand, and worker health and well-being on the other (1–5). Although the evidence for associations between work characteristics (ie, stressors) and worker health and well-being (ie, strain) is considerably stronger in cross-sectional than in longitudinal studies (2, 3) and whereas the strength of these associations varies across different combinations of stressors and well-being/health indicators (3, 5), overall the current evidence supports the notion that work characteristics affect work outcomes, including worker health and well-being.

Interestingly, the notion that the health and well-being of workers may also affect the (perceived and/or objective) characteristics of their jobs has attracted considerably less attention. The assumption that people are not just passive recipients of environmental influences but also actively shape that environment is not particularly controversial (eg, 6–8). However, research that *systematically tests* for the “reversed” effects of the presumed “outcomes” of work (such as health and well-being) on the presumed “antecedents” of these outcomes (ie, work characteristics) has remained rare. Apparently, it is implicitly assumed that the effects of work on the outcomes thereof are practically more relevant and theoretically more interesting than the reverse effects. Whether this is indeed the case is subject to further scrutiny, though. Current theorizing considers to an increasing degree the possibility of reversed relationships (ie, effects from health and well-being on the work environment), and empirical research supports the existence of such *strain-to-stressor effects* (9), although the evidence is scattered and piecemeal.

However, this issue of the *Scandinavian Journal of Work, Environment and Health* includes a major review (10) that fills this important void. Drawing on the results of ten high-quality longitudinal studies, Kenneth Tang shows that the evidence for a positive strain-to-stressor association is moderately strong in the case of job demands. For two other major work characteristics (job control and social support), no such evidence was present. His findings suggest that, whereas reciprocal stressor-strain relationships may exist for job demands, such relationships are considerably less likely to occur for other job characteristics.

In this editorial we focus on the possible mechanisms underlying the reversed association between worker health and the psychosocial work environment and provide some recommendations for future research in this area.

Although research on strain-to-stressor effects is scarce, it has been around for several decades. For example, already in the 1980s, it was shown that indicators of strain relate negatively to subsequent ratings of social support received from colleagues (11) and positively to subsequent experienced time pressure (12). Although an explicit theoretical framework for such strain-to-stressor effects is lacking, certain principles from existing psychological theories may shed light on this issue. For example, the Conservation of Resources theory assumes the existence of “loss spirals” (13), in which losing resources (ie, the “objects, personal characteristics, and energies that are either themselves valued for survival, directly or indirectly, or that serve as a means of achieving these resources”; p45) causes future resource loss. Pertaining to the strain-to-stressor association at work, a loss spiral refers to a process in which strained employees who have “lost” their resource of good health, are more likely to “lose” resources in their work, which in turn negatively affects their health, and so on. For example, a burned-out employee may be too exhausted to maintain enjoyable interactions with his/her colleagues and may consequently receive less social support at work, inducing even higher levels of burnout. The opposite process is referred to as a “gain spiral” (13).

Loss and gain spiral-like processes have also been proposed in other theoretical perspectives. For

example, the idea that healthy employees may become healthier over time whereas the health of unhealthy employees' may deteriorate over time is a variation on Robert Merton's familiar *Matthew effect* ("For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath"; 14, p58). Further, Barbara Fredrickson's (15) Broaden and Build theory proposes that positive emotions (which signify high well-being) broaden people's thought-action repertoire, which enhances their ability to interact with their environment. This enhanced interaction ability boosts employees' opportunities to increase their resources, which will subsequently positively affect their well-being and health, and so forth. Empirical research regarding these gain and loss spirals in the work context is scarce, but the available evidence supports the assumption that work stressors and strains are reciprocally related (16). Furthermore, Tang's (10) findings seem to indicate that such spirals may primarily exist for job demands (and not for job control and social support).

Four specific mechanisms have been proposed that account for the associations between employee health status and the stressors experienced in the work situation. Interestingly, whereas the gain and loss spiral-like approaches discussed above exclusively propose positive associations between work characteristics and employee health (the more positive the work environment, the better employee health and well-being), these mechanisms allow for both positive and negative relations. Moreover, these associations can be due to perceptual and/or actual changes in the work environment.

Regarding *perceptual changes*, two processes have been proposed. The "rosy perception mechanism" (17) presumes that healthy workers evaluate their work more positively over time, for example, because they have sufficient resources to meet their work demands, which causes them to perceive these demands as less severe over time. According to this mechanism, unhealthy employees may also change their perception of their work environment in a more positive way, for example, by adjusting their aspirations or changing their cognitions to reinterpret the characteristics of their job more favorably (cf. cognitive dissonance; 18). Conversely, the "gloomy perception" mechanism (17) refers to a process in which employees evaluate their work environment less positively over time. For example, due to their high levels of resources, healthy employees may feel that their capacities exceed the challenges offered by their job. Similarly, unhealthy employees may perceive their work less favorably over time, for example because their decreasing resources make it more difficult to meet their work demands.

*Actual job changes* may also account for the association between employee health and work characteristics. The "upward selection process" (17) refers to a process in which (un)healthy workers find more challenging or less stressful jobs. For example, an unhealthy employee may find refuge in a less stressful job, or an healthy employee may be promoted to a more challenging job. Finally, the "drift mechanism" (17), which is a derivate of the traditional "healthy worker effect", describes a situation in which (un) healthy employees change jobs and start working in a less favorable work situation (eg, a new job may not meet their expectations). These four mechanisms fit with the idea of loss and gain spirals as proposed in the Conservation of Resources theory (13). Specifically, for healthy employees, the rosy perception and upward selection mechanisms concur with the idea of a gain spiral, whereas for unhealthy employees the gloomy perception and the drift mechanisms may lead to a loss spiral. Longitudinal research (17) has generally supported the existence of these mechanisms, and also Tang's findings (10) can be interpreted in this light: his finding that strain is longitudinally related to increased job demands can be considered indicative of the gloomy perception and/or drift hypothesis.

Tang's review highlights the importance of conducting more studies on reversed associations between strain on the one hand, and job demands and other job characteristics on the other. We believe this research should address at least the following five issues.

Firstly, from a theoretical point of view it should be noted that not all work characteristics may be equally affected by strain, as evidenced by Tang's (10) review. This underlines the importance of developing a clear theoretical framework for the possible reversed associations between employees' health and well-being, and

the characteristics of their work. This is all the more important, since Tang's findings question whether the gain spirals proposed by Hobfoll and others (15, 16, 19) operate with respect to *all* possible strain-stressor relations; earlier research and theorizing has not distinguished among different types of stressors.

Secondly, the distinction between *perceptual change* and *actual job change* may need some refinement, as it fails to acknowledge that employees may also initiate actual changes in their work environment while staying in the same job. In this respect, the concept of job crafting is relevant. It occurs in the context of the current job and can be defined as "the changes that employees may make to balance their job demands and job resources with their personal abilities and needs" (20, p174). For example, healthy employees may engage in job crafting to make their job more challenging, whereas unhealthy employees might use their job crafting capabilities to increase their resources and/or to reduce demands. This implies that a simple distinction between real job changes (which is usually operationalized as a change of jobs) versus perceived changes in the job (drawing on the absence of a job change) is not sufficient: at the very least, the possibility that factual changes occur in the context of the current job should be acknowledged.

Thirdly, more research and theory development is needed to obtain insight in *how* (mediators) and *when* (moderators) each of the proposed mechanisms that can explain strain-to-stressor effects operates. Regarding potential mediators, it may be valuable to explicitly examine the proposed cognitive processes that underlie the rosy and gloomy perception mechanisms (eg, by examining employees' expectations regarding their jobs). With respect to moderators, it may be useful to take potentially relevant variables in the broader ecological context into account. For example, the extent to which employees' health status causes them to switch jobs may be dependent on the current situation on the labor market or on their position as a main breadwinner (21).

Fourthly, from a methodological point of view the statistical approach that is best suited to provide insight in the processes underlying reversed associations needs attention. The four mechanisms proposed by De Lange and colleagues (17) suggest that, over time, healthy and unhealthy employees may experience both positive and negative changes in the characteristics of their work: indeed, different processes may operate simultaneously within and between healthy and unhealthy workers. Statistically, these different processes may cancel each other out, resulting in non-significant longitudinal associations between health and work characteristics. This may erroneously lead to the conclusion that no reversed associations exist at all. Moreover, a significant positive or negative association between health and subsequent work characteristics is merely the outcome of the operation of these different processes, and can therefore not unambiguously be interpreted as support for any mechanism in particular. To obtain insight in the processes causing health to affect work characteristics, it would be valuable to create subgroups of workers based on their health status at the start of the study and examine longitudinally the development of work characteristics in each of these groups.

Finally, to obtain insight in the gain/loss spiral connecting work characteristics with employee health and well-being, future research should employ longitudinal designs with more than two measurement waves. Such an approach would also allow for examining the degree to which effects are contingent upon the length of the time interval (2). However, it should be noted that even in a well-designed study, it may be difficult to address each of the four mechanisms underlying strain-to-stressor relationships simultaneously, and we agree with Tang (10) that different study designs may be needed to examine these mechanisms.

In conclusion, we argue that in order to understand fully the relations between work characteristics and worker health and well-being, it is important for future research to not only consider stressor-to-strain effects but also to test for strain-to-stressor effects, and thus examine how worker health affect the psychosocial work environment. Obviously, this requires that longitudinal – preferably multi-wave – designs are used. In this context Tang's review (10) provides a valuable starting point, showing that the magnitude of strain-to-stressor effects may well depend on the stressor under consideration. However, the mechanisms accounting for strain-to-stressor effects deserve more attention, considering which

effects can be expected, why these effects should be present, for which strain/stressor combinations, and for which particular groups of workers. This implies that researchers should consider the possible mediators and moderators of the relationship between strains and stressors and requires that research designs are adjusted accordingly – certainly a daunting task, but one that is necessary to go beyond the ad-hoc interpretation of lagged strain-to-stressor effects.

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Madelon LM van Hooff  
 Radboud University  
 Behavioral Science Institute  
 Nijmegen, The Netherlands  
 [Email: M.vanHooff@psych.ru.nl]

Toon W Taris  
 Utrecht University  
 Department of Social and Organizational Psychology  
 Utrecht, The Netherlands  
 [Email: t.taris@uu.nl]

