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Adding insult to injury: Illegitimate stressors and their association with situational well-being, social self-esteem, and desire for revenge[*]

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ABSTRACT

Implying an offense to self, appraising a stressor as indicating a lack of consideration by others should have effects beyond its stressfulness per se. In Stress-as-Offense-to-Self theory (SOS), such stressors are called "illegitimate stressors." We assessed situations appraised as stressful in two diary studies ($N_1 = 117$, $N_2 = 137$). Outcome variables were feelings of resentment in both studies, plus nervousness, anxiety, and sadness in Study 1 and depressive mood, threat to social self-esteem, and desire for revenge in Study 2. Controlling for stressfulness, perceived illegitimacy predicted affective reactions that are outward-directed (feelings of resentment [Studies 1 and 2], threat to social self-esteem and desire for revenge [Study 2]); it also predicted sadness in Study 1 but not depressive mood in Study 2, nor nervousness (Study 1). Thus, not all hypotheses were confirmed but the pattern was as expected, in that results were consistent regarding outcomes typically associated with the attribution of blame. The independent contribution of perceived illegitimacy aligns well with the underlying Stress-as-Offense-to-Self theory. Practical implications refer to efforts to avoid illegitimate stressors, for instance by perspective-taking, by showing appreciation and support, and by supporting such behaviours through keeping stressors in general at a manageable level.

Humans tend to be concerned about the self (Alicke & Sedikides, 2009). Stress-as-Offense-to-Self (SOS) theory (Semmer et al., 2019) focuses on these concerns with regard to both personal and social self-esteem. Regarding the latter, SOS theory argues that messages about how much one is valued by others are conveyed not only in social interactions but also through conditions at work. Two concepts developed in this context refer to messages implied by events and circumstances at work: illegitimate tasks and illegitimate stressors. Tasks people consider unreasonable (i.e. outside their professional role) or unnecessary are called illegitimate tasks; they have been established

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as stressors that are associated with strain in a number of studies (e.g. Eatough et al., 2016; Fila et al., 2020; Semmer et al., 2015). Illegitimate tasks need not be stressful *per se* but rather become stressful under specific circumstances. By contrast, illegitimate *stressors* are stressful to begin with; in addition, however, they are appraised as being caused by others who could, and should, have prevented them. This attribution of blame implies a lack of consideration and respect, which induces an appraisal of the stressor as illegitimate and implies an offense to self. We will briefly discuss SOS theory and its implications, explain the concept of illegitimate stressors, and elaborate on why an illegitimacy appraisal should contribute to lower well-being over and above the basic stressfulness appraisal of the event. Thus, we propose that not only the stressfulness of a situation but also the attributed meaning of that situation is relevant for explaining how experiences at work relate to individuals' reactions (Mackey & Perrewe, 2014).

The Stress-as-Offense-to-Self model and the issue of legitimacy

Stress-as-Offense-to-Self (SOS)

The SOS model (Semmer et al., 2007; Semmer et al., 2019) builds upon the phenomenon that people tend to strive for a positive self-evaluation (personal self-esteem) as well as for a positive evaluation by important others (social self-esteem); it postulates that anything that may threaten or affirm the self is of special importance, tends to draw attention among competing stimuli, and has consequences for well-being (Alicke & Sedikides, 2009; Leary & Allen, 2011). The model further considers that people often identify with their occupational roles (Ashforth & Schinoff, 2016; Katz & Kahn, 1978); these become part of the self (Oyserman et al., 2012), and an attack on one's occupational role therefore is potentially self-threatening.

SOS distinguishes two paths, referring to personal and social self-esteem, respectively. Personal self-esteem reflects "the positivity of the persons' evaluation of self" (Baumeister, 2008, p. 694). It depends on meeting one's standards in terms of being competent and worthy (Brown & Zeigler-Hill, 2018). As work is a goal-related activity, competence demonstrated in pursuing these goals is important, making failures self-threatening and successes self-enhancing, as demonstrated in research on feedback (Brockner et al., 2003; Krings et al., 2015) and success (Grebner et al., 2010; Pfister et al., 2020b; Plemmons & Weiss, 2013). Besides competence, self-evaluation depends on meeting moral standards (for instance, being fair to colleagues). Meeting moral standards is closely tied to self-conscious emotions such as shame, guilt, and pride (Tangney & Tracy, 2012), which are regarded as part of moral emotions (Gausel & Leach, 2011; Greenbaum et al., 2020) but may also occur in the context of task-related failures and successes (Kim & Kammeyer-Mueller, 2018). Adequacy of performance and moral behaviour constitute the self-evaluation part of the SOS model; not meeting one's standards in this domain induces feelings of insufficiency and is therefore called "Stress through Insufficiency" (SIN).

The second path refers to social self-esteem and is related to positive and negative messages by others, indicating the degree to which one is being valued and appreciated (Stocker et al., 2010; Stocker et al., 2014) and communicating if one is perceived as "likable, competent, attractive, and moral" (Leary & Baumeister, 2000, p. 17). If favourable, such messages induce positive affect because they satisfy the need to belong; in the

negative case, they signal "relational devaluation" (Leary & Allen, 2011), which constitutes a stressor (Dickerson, 2008). Relational devaluation may be communicated directly, for instance by incivility (Cortina et al., 2017) or unfair criticism (Krings et al., 2015) but also by *not* communicating respect and appreciation people feel they deserve, for instance by not acknowledging achievements (Miller, 2001; Pfister et al., 2020a; Pfister et al., 2020b). However, SOS theory suggests that such messages may also be expressed more indirectly, for instance through job design. For example, autonomy signals trust that employees will use this opportunity in a competent and reliable way and thus implies they are being valued. Conversely, if management fails to repair or replace faulty equipment, the resulting performance constraints (Irmer et al., 2019; Pindek & Spector, 2016) may signal disinterest and negligence (Semmer et al., 2016). Such messages may also be sent by assigning illegitimate tasks – tasks people consider they should not have to do (Semmer et al., 2015; see below). Finally, illegitimate stressors, the core predictor of the current studies, refers to situations that are stressful to begin with and in addition are attributed to behaviour by others that could, and should, have been different. In sum, this part of the SOS model describes messages of (dis-)respect contained in interpersonal behaviour, work design, task assignments, and stressful conditions; it is called Stress as Disrespect (SAD; Semmer et al., 2019).

Self-evaluation (SIN) and social evaluation (SAD) are not independent from one another. The criteria used for self-evaluation reflect social norms; social evaluation may have pervasive effects on self-evaluation (Leary & Baumeister, 2000), and (in)sufficient performance may induce feelings related to social evaluations, such as shame or guilt in case of failure (Semmer et al., 2019), or pride in case of success (Grebner et al., 2010). Nevertheless, the mechanisms involved each have their own logic, and separating them conceptually helps understand the many ways through which events in (working) life are related to threats and boosts to the self.

Some of the phenomena emphasised by SOS theory are well established (e.g. incivility; Cortina et al., 2017); some are new (e.g. illegitimate tasks, illegitimate stressors). SOS theory integrates such seemingly diverse phenomena into a common framework regarding their importance for the self; it thus offers new perspectives for both theory and practice.

Two stressor concepts developed in the context of SOS theory are new (Semmer et al., 2019): illegitimate tasks (e.g. Eatough et al., 2016; Fila et al., 2020; Semmer et al., 2010; Semmer et al., 2015) and illegitimate stressors. Tasks are considered illegitimate to the degree employees cannot appropriately be expected to carry them out, either because they are outside of their occupational role (e.g. having "to review contract language that was the superiors' responsibility"; Pindek et al., 2019, p. 238) or because they should not have to be done at all (as when a report must be delivered in different formats for different departments; Muntz et al., 2019). Note that illegitimate tasks need not be stressful by themselves. For example, reviewing contract language is a perfectly normal task; but even employees who know how to do that may appraise it as illegitimate because it does not conform to their occupational role and thus signals a lack of respect for their core tasks. That the very same task may differ in legitimacy depending on its role-related meaning is illustrated by the reaction of nurses to vignettes describing patients who keep asking for such things as getting them a cup of tea: Many nurses considered responding to this request part of their job in terms of supporting the patient's healing process – but only as long as the patients were frail and needed help; if they were well enough to get the tea themselves, the nurses

resented it as being treated like a servant (Semmer, 2000). Accordingly, the Bern Illegitimate Tasks Scale refers to tasks about which people wonder "if they make sense at all" (unnecessary tasks) or believe "should be done by someone else" (Semmer et al., 2015).

That illegitimate tasks need not be stressful as such distinguishes them from the second new stressor concept, illegitimate stressors, which constitutes the focus of the current studies.

Illegitimate stressors

Some stressors are hard to avoid. Machines may break down, cars may not work, and printers may have paper jams. Such events are likely to be stressful, but they usually do not threaten the self; they are simply a fact of life, although a stressful one. Certain stressors are even a defining part of an occupational role, and thus of the professional identity. Thus, working in a hospital may imply having to stay longer because of an emergency, and working as a butcher may imply working in a cold environment. Being a legitimate part of one's occupational role may diminish the strain associated with such stressors. Thus, Peeters et al. (1995, p. 471) demonstrated that "stressors that are *typical* for a profession (…) are appraised as least 'significant'," and for these stressors the association with negative affect was smaller than for other stressors. Haslam et al. (2005) found that members of a bomb disposal team perceived being confronted with a bomb no more stressful than working long shifts in a noisy bar. Hart et al. (1994) demonstrated that well-being of police officers was more strongly associated with hassles related to administration, supervision, etc., which "can occur in any organizational setting" than with hassles stemming "from the tasks specific to police work" (p. 287). Thus, stressors that are part of one's professional identity may become normalised (Ashforth, 2001), which may reduce their impact. In some cases, such stressors may even imply an affirmation of the self, as when butchers are proud to be able to work in cold environments and engage in downward comparisons with salespeople who could not endure such conditions (Meara, 1974).

But imagine doctors on call being awakened during the night to treat patients telling them that they deliberately came at night because they would not have to wait as long as during the day; that an employee suspects a company car does not work because maintenance has been neglected; or that a printer jam was caused by a colleague who simply left the problem for the next user. In such cases, others are responsible for the stressful situation, who *could* and *should* have acted in a different way; according to Fairness theory (Folger & Cropanzano, 2001), such an attribution would imply injustice, and injustice signals disrespect (Bies, 2015; De Cremer & Tyler, 2005; Miller, 2001). Such stressors are called *illegitimate stressors* in the SOS model. Adding insult to injury, the illegitimacy involved should induce stress beyond the initial stressfulness of the event. This requires that the appraisal as illegitimate does not simply intensify the appraisal of stressfulness but is conceptually distinct, and thus does not correlate with the stress appraisal to such an extent that it becomes redundant as a predictor. One could speak of a two-dimensional appraisal, referring to stressfulness and illegitimacy, respectively.

We are aware of only one study that has tested illegitimate stressors. Dettmers and Biemelt (2018) found that well-being was predicted by both the requirement to be available for work outside working hours (i.e. the stressor) and by its perceived illegitimacy.

Note that it is not the content that renders stressors illegitimate. Any stressor may become illegitimate based on a pertinent attribution. Thus, being confronted with "many little tasks in addition to my ongoing work" need not imply illegitimacy. The added tasks may be attributed to the way things are in this kind of job, to special circumstances (e.g. because a colleague is ill), or to behaviour of others that is perceived as inappropriate (delegating additional tasks without proper consideration). The stressor is illegitimate only in the latter case. Reflecting an attribution to others' behaviour, illegitimacy is social. By contrast, the content of the stressor (e.g. workload) may well be impersonal; it need not be derived from SOS theory.

Illegitimate stressors do not require an intent to harm; the instigator may not even have thought of the focal person, implying the absence of a specific "target". Nevertheless, in the eyes of the focal person he or she should have foreseen the consequences (Miller, 2001). Even if thinking of the focal person, it suffices that the instigator simply neglects the interests of the focal person rather than intentionally violating them. Thus, illegitimacy overlaps with incivility, which represents behaviours of low intensity and high ambiguity regarding intention to harm (Cortina et al., 2017). However, despite this overlap the two constructs clearly have different foci. Incivility focuses on social interactions, referring to behaviours such as putting someone down, or doubting someone's judgment (Cortina et al., 2017). In contrast, illegitimate stressors do not require direct social interactions; one may hardly ever see the people deemed responsible (e.g. the maintenance department); indeed, one may not even know them.

Illegitimate stressors and injustice

Illegitimate stressors can be regarded as a special case of injustice. Traditionally, organisational justice research did not focus on stress (see Cropanzano et al., 2001); nevertheless, some research has clearly established injustice as a stressor (Cohen-Charash & Spector, 2001; Robbins et al., 2012). More specifically, injustice implies a relational devaluation and can be regarded as an identity-relevant stressor (Thoits, 1991).

However, in the context of stress, injustice (or one of its subconstructs) itself typically is the stressor (e.g. Greenberg, 2010; Robbins et al., 2012; Spector & Fox, 2002). However, any event may be evaluated in terms of justice. According to Folger and Cropanzano (2001), events are appraised as unfair if one would be better off if the event had not occurred (the *would* condition, implying that the situation is aversive); if another person could have prevented the event by acting differently (the *could* condition); and if this person should have acted differently (the *should* condition). Much of justice research has focused on the extent to which these conditions determine fairness perceptions (Nicklin, 2013). By contrast, the extent to which daily (work) stressors are evaluated as unjust, and the consequences of such evaluations, have not received much attention. We propose that this evaluation is particularly important in the processes linking stressful events at work with outcomes (Semmer et al., 2019).

Effects of stressor illegitimacy: The present research

Illegitimate Stressors have two characteristics. First, they are appraised as stressors by themselves, that is, they should induce strain independent of illegitimacy. Second, they are

appraised as illegitimate, which should induce additional strain, above and beyond their intrinsic stressfulness. Both appraisals should predict affective reactions in the situation. However, these vary in specificity. Stressfulness reflects the appraisal of the situation as stressful in general; illegitimacy is also stressful but additionally reflects an appraisal as being treated in an unfair way and being devalued. Some outcome variables should therefore apply to both appraisals, whereas others are more specific to the appraisal as illegitimate.

Outcome variables I: Negative affect

Stress reactions are characterised by negative mood or emotions, that is, negative affect (Lazarus, 1993), and many studies use indicators of negative affect to assess stress (e.g. Cohen-Charash & Spector, 2001; McIntyre et al., 2008). Acute stress reactions typically are associated with arousal (Ganster et al., 2018; McEwen & Wingfield, 2003), indicated by constructs such as anxiety, nervousness, tension, or anger/resentment (Cropanzano et al., 2003; Posner et al., 2005; Warr, 2007), which represent the "distress quadrant" of the emotional circumplex (Van Katwyk et al., 2000). Negative affective reactions to stress may also be combined with low arousal, indicated by sadness or depression (Ganster & Rosen, 2013; Van Katwyk et al., 2000).

However, classifying affect in terms of valence and arousal may not suffice for capturing situation-specific affective reactions concerning intra-individual variation. Intra-individual fluctuations of affect tend to be more specific than affect assessed in terms of between-person effects, implying that fluctuations in indicators such as nervousness and anxiety are less highly correlated and reflect a general construct to a lower extent than in between-person analyses (Brose et al., 2015). We therefore specifically measured nervousness, anxiety, and sadness in Study 1. In addition, we assessed resentment, representing the anger family (Geurts et al., 1999) in both studies, and depressive mood (Van Katwyk et al., 2000) in Study 2.

Relating these affective reactions to the appraisal of the situation leads to somewhat different hypotheses regarding (a) stressfulness and (b) illegitimacy. *Stressfulness* as a general measure should be related to negative affect in general, and thus to all the variables mentioned above. By contrast, *illegitimacy* represents an appraisal in terms of injustice and includes an attribution to inappropriate behaviour by others. Although anger dominates in such situations (Bies, 2015; Hegtvedt & Parris, 2014; Mikula et al., 1998; Miller, 2001; Weiss et al., 1999), such appraisals may be related to other types of negative affect as well (Cohen-Charash & Spector, 2001; Robbins et al., 2012). The appraisal as illegitimate should therefore be related to the resentment measure, but also to nervousness, another high-arousal negative affect. However, we see no reason why illegitimacy should be related to anxiety over and above stressfulness.

As attributing negative events to others' inappropriate behaviour may elicit disappointment (Levine, 1996; Van Dijk & Zeelenberg, 2002) and hurt feelings (Hardecker, 2019), the low-arousal emotion of sadness /depression has also been found to be related to injustice and disrespect, although less strongly than anger-related emotions (Leary & Baumeister, 2000; Mikula et al., 1998; Miller, 2001)

Outcome variables II: Threat to self-esteem and desire for revenge

As SOS theory connects illegitimacy to disrespect, we also asked participants if they felt treated in a derogatory way, which constitutes a threat to social self-esteem. Furthermore,

as someone is blamed for the stressor, the situation should induce a desire for revenge (Tripp & Bies, 2015). Threat to social self-esteem and desire for revenge are rather specific to illegitimacy; our hypotheses regarding these two outcomes are therefore limited to illegitimacy.

Hypotheses

Our hypotheses refer to intra-individual effects; a person should show stronger reactions to situations to the extent he or she appraises it as stressful, and to the extent he or she appraises it as illegitimate. We investigated our hypotheses in two diary studies employing multilevel analysis; outcome measures refer to momentary feelings in the situation.

Hypothesis 1: Perceived stressfulness of the situation predicts higher values in (a) nervousness (assessed in Study 1), (b) anxiety (Study 1), (c) sadness (Study 1) / depressive mood (Study 2), and (d) feelings of resentment (Studies 1 and 2).

Hypothesis 2: Over and above perceived stressfulness, perceived illegitimacy predicts higher values in (a) nervousness (Study 1), (b) sadness (Study 1) / depressive mood (Study 2), (c) feelings of resentment (Studies 1 and 2), (d) threat to social self-esteem (Study 2), and (e) desire for revenge (Study 2).

Study 1

Method

Sample and procedure

The sample was obtained from a division of a large logistic enterprise, as part of a larger study (Berset et al., 2009; Berset et al., 2011). Our goal was to have a large variety of different occupations in the sample. The organisation was chosen mainly for pragmatic reasons, notably personal contact to people in management. The aim was to have three waves of measurement with two daily observations each. For internal reasons, however, the organisation had to cancel waves two and three.

Members of the research team presented the study at several meetings. 147 participants completed the questionnaires, corresponding to a participation rate of approximately 65 percent of those attending. As there is no intra-individual variance in stressfulness and illegitimacy for participants who reported no (6) or only one (24) stressful event, data from these participants were removed from the sample, resulting in a final sample of $N = 117$. Demographic variables were measured with a general survey at the beginning of the study. Those removed from the analyses were not significantly different from the final sample in terms of demographics.

Participants' age ranged from 20 to 61 years ($M = 40.3$, $SD = 10.1$). More than two thirds (69%) were male. Thirteen percent had finished mandatory schooling (9 years), 58% had finished vocational training, and 29% had a college or university degree. A variety of occupations was represented (e.g. transport, office jobs, buying, IT). Average working hours were 40.7 h / week ($SD = 4.9$), and organisational tenure ranged from 0.5 to 41 years ($M = 17.2$; $SD = 11.5$).

Measures

Participants filled in a general questionnaire, and subsequently reported stressful events they experienced during two workdays in little booklets (one for each event). Our focus is on intra-individual effects; we therefore report only the diary data. The diaries were a paper-and-pencil version (pocket diary) of the computer assisted self-observation system (COMES) by Perrez and Reicherts (1996). A member of the research team contacted the participants about one month before the beginning of the study, and participants indicated two, not necessarily consecutive, days in the pertinent week they considered feasible. During that week, at least one member of the research team went to the site several times, reminded participants to complete the surveys, and clarified questions. Furthermore, participants were promised (and received) personal and organisation-wide feedback after the study was completed.

Stressful events. Participants were asked to document every stressful situation they experienced at work, both minor and major, over two working days; to briefly describe the situation; and to rate the *stressfulness* of the event on a 7-point Likert scale ranging from 0 (*no stress*) to 6 (*very high*). Such measures have successfully been used, mostly with regard to stressfulness of the job (Houdmont et al., 2019); in our study it referred to the situation the participants described. It was left up to them what they considered a stressful event. We encouraged reporting of "both minor and major" events to avoid a focus on major events, as pilot interviews had suggested some reluctance to admit being stressed by minor events. The 117 participants reported 403 events ($M = 4.16$, $SD = 1.77$).

Illegitimacy of stressful situations. Based on a pilot study in which participants indicated their appraisal of illegitimate stress situations presented to them in the form of vignettes, seven adjectives (unnecessary, unreasonable, avoidable, unacceptable, undue, senseless, and incorrect) were used to indicate the perceived illegitimacy of each situation on a 5-point Likert scale ranging from 1 (*does not apply at all*) to 5 (*strongly applies*).

Situational well-being. Situational well-being was assessed by three bipolar items (Perrez & Reicherts, 1996): nervous-calm, sad-cheerful, anxious-confident; answers ranged from 1 (*very nervous*) to 6 (*very calm*), etc. Answers were coded so that high values reflect negative affect.

Feelings of resentment. Feelings of resentment represent feelings from the anger family (Weiss & Cropanzano, 1996); they were assessed with a scale by Geurts et al. (1999), containing seven feelings in that situation, such as indignation, anger, and unfairness. Responses ranged from 1 (*not at all*) to 7 (*very much*).

Results

Data were analyzed using a multilevel random coefficient model estimated in the R package lme4 (Bates et al., 2015). We focused on the within-person effect on well-being and feelings of resentment of the illegitimacy of a stressful situation, controlling for its stressfulness. Illegitimacy and stressfulness were group mean-centered; thus, the coefficients for these variables reflect the effect of a person being high or low relative

Table 1. Means, standard deviations, and correlations of the measures (Study 1).

Variables	M	$SD_{b\text{-}p}$	$SD_{w\text{-}p}$	ICC	1	2	3	4	5	6
1. Illegitimacy of situation	3.44	0.62	0.76	.39	(.81)	.16*	.00	.09	.19*	.61*
2. Stressfulness of situation	3.12	0.76	1.09	.33	.20*	(n.a.)	.36*	.33*	.27*	.29*
3. Nervousness	3.84	0.52	1.06	.33	.06	.39*	(n.a.)	.26*	.28*	.09
4. Anxiety	3.40	0.50	1.01	.19	.01	.25*	.37*	(n.a.)	.35*	.20*
5. Sadness	3.78	0.59	0.73	.39	.23*	.31*	.30*	.45*	(n.a.)	.31*
6. Feelings of resentment	3.49	0.85	1.02	.41	.62*	.46*	.23*	.24*	.34*	(.78)

Note: SD and ICC are based on variance estimates of unconditional (null) models. Correlations above the diagonal reflect the within-person associations of the constructs. Correlations below the diagonal reflect the between-person associations of the aggregated measures. Reliability estimates for the situation-to-situation change (R_c, calculated according to Shrout & Lane, 2012) are shown in parentheses in the diagonal of the table. $SD_{b\text{-}p}$ = Between-person standard deviation. $SD_{w\text{-}p}$ = Within-person standard deviation. ICC = Intraclass correlation (proportion of the between-person variance compared to the total variance).
*p < .05. Two-tailed tests.

Table 2. Multilevel analyses predicting well-being and feeling of resentment (Study 1).

	Nervousness		Anxiousness		Sadness		Feelings of resentment	
	B (Beta)	t	B (Beta)	t	B (Beta)	t	B (Beta)	t
Intercept	3.77		3.37		3.73		3.44	
Stressfulness of situation	.35 (.36)	6.06*	.30 (.32)	5.77*	.17 (.25)	4.37*	.20 (.21) [a]	4.33*
Illegitimacy of situation	-.08 (-.06)	−1.08	.05 (.04)	.68	.14 (.15)	2.60*	.76 (.57)	12.40*
Explained variance	[.10; .00]		[.08; .00]		[.07; .02]		[.40; .27]	

Note: [a] Intercepts were allowed to vary for each individual, random slope effects are indicated by a superscript. Numbers in brackets [$R_w^{2(f1v)}$; $\Delta R_w^{2(f1v)}$] describe the proportion of within-cluster outcome variance explained by Level-1 predictors (stressfulness of and illegitimacy of situation) via fixed slopes and random slope (co)variation and the difference in the proportion of within-cluster outcome variance explained by Level-1 predictors of a model with only stressfulness and a model with stressfulness and illegitimacy (i.e. additional variance explained by illegitimacy beyond stressfulness), respectively (see Rights & Sterba, 2020). Standardised coefficients (Beta) were calculated using the following formula: Beta = $SD_{within}(X)/SD_{within}(Y)$.
*p < .05.

to his or her own mean for that variable across situations and are not confounded with between-person variables (Gabriel et al., 2018).

Means, standard deviations, reliability estimates, intraclass correlations, and zero-order correlations are shown in Table 1, the multilevel analyses in Table 2. Confirming Hypothesis 1, perceived stressfulness predicted all four outcome variables. Regarding Hypothesis 2, perceived illegitimacy predicted sadness (2b) and feelings of resentment (2c) but not nervousness (2a).

Study 2

Study 2 had the same design as Study 1; in addition to feelings of resentment we assessed depressive mood, threat to social self-esteem, and desire for revenge as outcome variables.

Method

Sample and procedure

Study 2 was conducted in two public service organisations, as part of a larger three-wave study with a time lag of approximately 6 months between waves (Gross et al., 2011;

Kottwitz et al., 2013). At each wave, participants filled in diaries for 2 working days within a week (as in Study 1), resulting in event-related diaries for six days. Demographic variables were measured with a general survey at the beginning of the first wave.

The first organisation was a site of a publicly owned production company, where 263 employees worked at the beginning of the study. The study was presented at several meetings, which were, however, not attended by all employees. Eighty-five employees agreed to participate, corresponding to a participation rate of 32% of all employees. Most of these (94%) were male, and they worked in a variety of occupations, including electronics, mechanics, engineering, IT, and administration. The second organisation was a government agency. Again, the project was presented at several meetings. Of 272 employees employed there at the beginning of the study, 78 agreed to participate, corresponding to a participation rate of 29%. Participants were mostly in administrative jobs; a high percentage was female (72%).

The total sample consisted of 163 participants, of which 26 were removed from analyses because they reported no, or only one, stressful event and thus had no variance in event stressfulness and illegitimacy. In the resulting final sample of 137 employees, age ranged from 16 to 62 years ($M = 40.0$, $SD = 11.9$). Males were in the majority (59%), 3% had finished basic schooling (9 years), 34% had finished vocational training, and 63% had a college or university degree. On average, they worked 38.6 h per week (SD = 6.8), and organisational tenure ranged from 0.1 to 40 years ($M = 8.3$; $SD = 9.8$). Those who were excluded because of no variance in appraisals did not significantly differ from the final sample in terms of demographics, except that they worked about two more hours per week (40.7 vs. 38.6; $p = .03$).

Measures

Stressful events and their appraisal in terms of stressfulness and illegitimacy were assessed with little booklets (one for each event), as in Study 1. The 137 participants reported 753 events ($M = 7.37$, $SD = 3.56$). As outcomes we measured feelings of resentment, depressive mood, threat to social self-esteem, and desire for revenge as felt in the situation.

Depressive mood. Depressive mood was assessed with three items (depressed, discouraged, gloomy) from the Job-Related Affective Well-being Scale (Van Katwyk et al., 2000). Response options ranged from 1 (*not at all*) to 5 (*very much*).

Feelings of resentment. Feelings of resentment were assessed as in Study 1.

Threat to social self-esteem. Threat to social self-esteem was assessed with two items: "I felt offended as a person" and "I felt treated disrespectfully." Responses ranged from 1 (*not at all*) to 5 (*very much*).

Desire for revenge. One item asked to what extent the situation was associated with a desire for revenge. The response format ranged from 1 (*not at all*) to 7 (*very much*).

Results

Data were analyzed using the same statistical procedure as in Study 1. Means, standard deviations, reliability estimates, intraclass correlations, and zero-order correlations are shown in Table 3. Table 4 presents results from the multilevel analyses. In line with Hypothesis 1, and consistent with the results from Study 1, perceived stressfulness predicted feelings of resentment and depressive mood. In addition, there was an effect of stressfulness on threat to social self-esteem that we had not predicted. In line with Hypothesis 2, illegitimacy predicted feelings of resentment, threat to social self-esteem, and desire for revenge; contrary to Hypothesis 2, and contrary to the results of Study 1, it did not predict depressive mood. Additional analyses in which we controlled for organisation at Level 2, and for measurement occasion on Level 1, did not alter the effects of illegitimacy and stressfulness in any relevant way.

Table 3. Means, standard deviations, and correlations of the measures (Study 2).

Variables	M	SD_{b-p}	SD_{w-p}	ICC	1	2	3	4	5	6
1. Illegitimacy of situation	3.11	0.59	0.94	.28	(.85)	.06	.04	.53*	.29*	.25*
2. Stressfulness of situation	3.26	0.65	1.05	.28	.14	(n.a.)	.46*	.29*	.14*	.11*
3. Depressive mood	2.20	0.59	0.85	.33	.16	.49*	(.80)	.40*	.17*	.15*
4. Feelings of resentment	3.04	0.72	1.07	.32	.56*	.45*	.60*	(.77)	.40*	.37*
5. Threat to social self-esteem	1.80	0.49	0.88	.23	.31*	.30*	.30*	.58*	(.68)	.24*
6. Desire for revenge	1.34	0.29	0.89	.10	.31*	.21*	.19*	.50*	.46*	(n.a.)

Note: *SD* and ICC are based on variance estimates of unconditional (null) models. Correlations above the diagonal reflect the within-person associations of the constructs. Correlations below the diagonal reflect the between-person associations of the aggregated measures. Reliability estimates for the situation-to-situation change (R_c, calculated according to Shrout & Lane, 2012) are shown in parentheses in the diagonal of the table. SD_{b-p} = Between-person standard deviation. SD_{w-p} = Within-person standard deviation. ICC = Intraclass correlation (proportion of the between-person variance compared to the total variance).
*$p < .05$. Two-tailed tests.

Table 4. Multilevel analyses predicting feeling of resentment, depressive mood, threat to social-esteem, and desire for revenge (Study 2).

	Feelings of resentment		Depressive mood		Threat to social self-esteem		Desire for revenge	
	B (Beta)	t	B (Beta)	T	B (Beta)	t	B (Beta)	t
Intercept	2.99		2.21		1.79		1.32	
Stressfulness of situation	.25 (.25)[a]	6.99*	.36 (.37)[a]	10.35*	.10 (.14)	3.12*	.06 (.06)[a]	1.67
Illegitimacy of situation	.56 (.50)[a]	13.47*	.01 (.01)[a]	0.16	.27 (.35)[a]	6.42*	.19 (.18)[a]	3.95*
	[.34; .19]		[.27; .04]		[.13; .12]		[.16; .12]	

Note: [a] Intercepts were allowed to vary for each individual, random slope effects are indicated by a superscript. Numbers in brackets [$R_w^{2(fiv)}$; $\Delta R_w^{2(fiv)}$] describe the proportion of within-cluster outcome variance explained by Level-1 predictors (stressfulness of and illegitimacy of situation) via fixed slopes and random slope (co)variation and the difference in the proportion of within-cluster outcome variance explained by Level-1 predictors of a model with only stressfulness and a model with stressfulness and illegitimacy (i.e. additional variance explained by illegitimacy beyond stressfulness), respectively (see Rights & Sterba, 2020). Standardised coefficients (Beta) were calculated using the following formula: Beta = $SD_{within}(X)/SD_{within}(Y)$.
*$p < .05$.

General discussion

We proposed that stressors are not only appraised in terms of their stressfulness as such, but also in terms of their (lack of) legitimacy. Attributing a stressful event to a lack of someone's consideration or diligence should induce an appraisal of illegitimacy, which should have an additional impact on outcome variables. Multilevel analyses focusing on intra-individual effects, and ruling out inter-individual effects, supported our assumptions to a considerable degree.

In Study 1, perceived stressfulness predicted all four outcome variables: nervousness, anxiety, sadness, and feelings of resentment, fully supporting Hypothesis 1. Controlling for perceived stressfulness, illegitimacy predicted sadness and feelings of resentment, but not nervousness and anxiety, thus partly confirming Hypothesis 2.

Hypothesis 1 was confirmed in Study 2 as well, as stressfulness predicted both feelings of resentment and depressive mood. Although not hypothesised, stressfulness also predicted threat to social self-esteem. Hypothesis 2 was confirmed for three of the four outcome variables, as illegitimacy predicted feelings of resentment, threat to social self-esteem, and desire for revenge, but not depressive mood.

Our results demonstrate that people do, indeed, distinguish between stressfulness and illegitimacy in their appraisal of situations. Illegitimacy did not simply intensify the appraisal of the situation as stressful; if it had, illegitimacy would not be significant over and above stressfulness. Furthermore, the two predictors were correlated only weakly ($r_{\text{within}} = .16$ and $.04$ and $r_{\text{between}} = .20$ and $.14$ for Studies 1 and 2, respectively). Therefore, it seems important to assess both aspects of a stressful situation separately in pertinent studies.

One of the most striking results of our studies is that illegitimacy is predictive over and above stressfulness in rather specific ways. In line with previous research (Ganster & Rosen, 2013; Sonnentag & Frese, 2013), stressfulness predicted most strain variables. In contrast, illegitimacy consistently predicted outcome variables that are known to be specifically associated with blaming others – anger / resentment, threat to social self-esteem, and desire for revenge. Effects for other outcome variables we had postulated were either absent (nervousness) or inconsistent (sadness / depressive mood). Moreover, in Study 1 the regression coefficient for sadness, although significant, was considerably smaller than that for feelings of resentment. Furthermore, for two outcome variables we consider especially pertinent for illegitimacy (feelings of resentment; threat to social self-esteem), the effect was larger for illegitimacy than for stressfulness; for the third of these variables (desire for revenge) it was the only predictor.

In addition to the regression coefficients we calculated the proportion of within-person variance explained by illegitimacy, controlling for stressfulness, following Rights and Sterba (2020). The authors note that such calculations in multilevel models are not without problems, implying that the values obtained may not simply be taken at face value. However, the results of our analyses are very clear-cut, yielding two groups of outcomes. The first group consists of three outcomes: (a) nervousness (Study 1), (b) anxiousness (Study 1), and (c) sadness (Study 1) / depressive mood (Study 2). For these outcomes, illegitimacy explained very little of the total (within-person) variance beyond the stressfulness. The second group consists of three outcomes for which illegitimacy accounted for a sizable part of the variance. These outcomes are (d)

feelings of resentment (both studies), (e) threat to social self-esteem (Study 2), and (f) desire for revenge (Study 2). For this group, illegitimacy predicted between 65 and 87% of the variance explained by stressfulness and illegitimacy together, or 12–28% of the total within-person variance (see Tables 2 and 4). Although these values must be regarded as a rough approximation, they do support the contention that illegitimacy is an especially potent predictor of outward-directed reactions to stressful situations that are attributed to someone's inappropriate behaviour (see Bies, 2015). Details on these analyses can be obtained from the authors. This pattern underscores the importance of feeling devalued, which is a core element of SOS theory. We therefore feel that not confirming the hypotheses about illegitimacy predicting nervousness and sadness does not seriously undermine our conceptual approach, as these hypotheses are not as central to our approach as the pattern of predictions by illegitimacy, which was confirmed.

Stressfulness predicted not only all more general strain reactions but also threatened social self-esteem, which we hypothesised to be predicted by illegitimacy only. We surmise that this effect might relate to an appraisal of a stressful situation as being undeserved (Feather, 2006), threatening one's belief in a just world (Ellard et al., 2016; Lerner, 2003). Thus, people can feel being treated in a derogatory way even if no one specifically is to blame for the event, or beyond the effects of such blaming. This interpretation would be in line with findings that even in the absence of someone to blame, the mere aversiveness of a situation may suffice to elicit reactions similar to those typically elicited by blame. Thus, Mikula (2003) found that perceiving a violation of entitlement (or deservedness) predicted perceived injustice even with attribution variables such as personal causation and lack of justification controlled. Evidently, stressors in general may be appraised as undeserved and perceived as indicators of life being unfair, and this might explain the effect of stressfulness on feeling treated in a derogatory way. Such attributions may well entail a self-serving aspect (Tripp & Bies, 2015) by warding off threats to the personal self, which illustrates that the two aspects of SOS theory (SIN and SAD) are closely intertwined.

Limitations and strengths

Our studies are not without limitations. First, all measures were assessed using self-report. However, the small (intra-individual) correlations between perceived stressfulness and illegitimacy ($r = .16$ in Study 1 and $r = .06$ in Study 2) argue against a large bias in terms of overall negative or positive perceptions. Second, in Study 1, we assessed stressful events for two days only. On the other hand, Study 2 entailed three two-day assessments over a year in two distinct organisations. Nevertheless, future research may investigate these relationships using longer observation periods. Another limitation can be seen in the employment of measures containing only one or two items. Their use was based (a) on considerations that lengthy questionnaires may demotivate participants, especially when questionnaires have to be filled in several times (Ohly et al., 2010), and (b) on empirical evidence for the potential of single-item measures to yield valid results (Fisher et al., 2016; Postmes et al., 2013). Regarding compliance, the personal contact with members of the research team served as a reminder to fill in the questionnaires and as a motivator to do so.

However, we have no measure of when exactly the questionnaires were completed, and we cannot rule out that some participants filled in some questionnaires at the end of a day. However, to the extent this might have happened it would likely introduce a type of halo effect and reduce the ability of the illegitimacy measure to predict outcomes over and above stressfulness. Finally, the request to report events may have sensitised participants to note events they might have ignored under normal conditions, although our experience in pilot interviews rather suggests the opposite, that is, people try to avoid being seen as overly sensitive and not stress-resilient.

Implications for theory and research

Our study was based on the Stress-as-Offense-to-Self theory, which argues for a stronger focus on the implications of stressors and resources for people's self-esteem, both personal and social (Semmer et al., 2019). Our results are in line with this approach, and they argue for the inclusion of attribution processes in the experience of stress to a larger degree than is customary in occupational health psychology. At the same time, it should be noted that the mechanisms postulated here are not new; they are rather prominent in the field of justice (Cropanzano et al., 2001) and in research on aggression (Hershcovis, 2011) and revenge (Tripp & Bies, 2015). However, occupational health psychology so far has largely neglected this tradition. We believe that taking these aspects into account promises to advance research on work stress.

In occupational health psychology, many authors have presented classifications of stressors (e.g. Kahn & Byosiere, 1992; Sonnentag & Frese, 2013). For instance, Sonnentag and Frese (2013) refer to categories such as physical, task-related, role-related, social, and work-schedule-related as well as to traumatic events and stressful change processes. These are useful categories, and they can guide research as well as practical interventions. However, they do not refer to the *meaning* of stressors, which in many cases may not follow such classifications but rather relate to their implications for the self; these include lack of appreciation and recognition (Semmer et al., 2019). Thus, (lack of) legitimacy of stressors is important theoretically; it builds a bridge to pertinent research in other areas, such as justice and aggression, and it opens research opportunities by suggesting to include attributions as a central construct in research on stress at work. Note that such attributions, although ultimately reflecting individual appraisals, also may reflect shared cultural norms (Degoey, 2000; Ford & Jin, 2015) and may also be investigated at the group or organisation level. Furthermore, such attribution sometimes can, at least in principle, be verified objectively (e.g. someone causing a paper jam in the printer).

Practical implications

Our results indicate that attributing stressors to lack of consideration (or even malice) of others, and thus perceiving them as being avoidable, adds to their impact. Furthermore, stressors have been shown to have less impact if they are appraised as unavoidable and meaningful in relation to one's occupational identity (Hart et al., 1994; Haslam et al., 2005; Peeters et al., 1995). This contains two important messages. First, to the extent that potentially stressful situations are, indeed, unavoidable,

employees are more likely to accept them and to deal with them with limited risk of negative consequences, both for the employees and the organisation. Obviously, this does not apply without limits, but it may well apply to many of the daily stressors occurring in organisations. Thus, if there is a good rationale for stressors being unavoidable, organisations can refer to it; needless to say, the rationale given must be credible and not just constitute a defensive attempt at justification. Second, a focus on stress that is due to a lack of foresight, care, or diligence, is promising. Stressors that are avoidable create unnecessary performance constraints (Irmer et al., 2019; Pindek & Spector, 2016) indicating inefficient processes and implying that avoiding them would profit both the organisation and the employees.

Supporting people in taking each other's perspective (e.g. by cross-training; Salas et al., 2015) might help anticipate stress one may create for others. Furthermore, a climate characterised by mutual respect and support is likely to be associated with anticipating, and avoiding, problems for others. Supervisors should therefore support such a climate, and organisations might consider pertinent trainings (e.g. the Civility, Respect and Engagement at the workplace (CREW) programme; Osatuke et al., 2013). Finally, organisations should try to keep stressors in general at a manageable level. Under stress, employees frequently maintain performance regarding their primary tasks at an acceptable level at the cost of neglecting secondary tasks (Hockey, 1997). Not refilling the paper in a printer or ignoring a developing problem that is likely to have serious effects only later would be perfect candidates for such secondary tasks that might be neglected under stress. Thus, under high stress employees may create additional stressors that are perceived as illegitimate and therefore harm social relations among employees.

Conclusion

Our results demonstrate the importance of considering not only the degree of stressfulness but also attributional processes that signal the extent to which the stressor is appraised as due to a lack of consideration by others, and thus as illegitimate. We have shown that the lack of legitimacy does not simply augment perceived stressfulness but constitutes an additional appraisal that adds to the stressor's effect, notably with regard to outward-directed affect associated with blaming others, that is, feelings of resentment, feelings of social devaluation, and desire for revenge. Focusing on illegitimacy as a potential characteristic of any stressor, and thus going beyond traditional research on injustice as an occupational stressor, our results demonstrate that not only the degree of stressfulness but also the meaning of stressful events, especially with regard to the self, are relevant in interactions between individuals and their (work) environment.

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References

Alicke, M. D., & Sedikides, C. (2009). Self-enhancement and self-protection: What they are and what they do. *European Review of Social Psychology*, *20*(1), 1–48. https://doi.org/10.1080/10463280802613866

Ashforth, B. (2001). *Role transitions in organizational life: An identity-based perspective*. Erlbaum.

Ashforth, B. E., & Schinoff, B. S. (2016). Identity under construction: How individuals come to define themselves in organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, *3*(1), 111–137. https://doi.org/10.1146/annurev-orgpsych-041015-062322

Bates, D., Maechler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, *67*(1), 1–48. https://doi.org/10.18637/jss.v067.i01

Baumeister, R. F. (2008). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 1, pp. 680–740). McGraw-Hill.

Berset, M., Semmer, N. K., Elfering, A., Amstad, F. T., & Jacobshagen, N. (2009). Work characteristics as predictors of physiological recovery on weekends. *Scandinavian Journal of Work, Environment & Health*, *35*(3), 188–192. https://doi.org/10.5271/sjweh.1320

Berset, M., Semmer, N. K., Elfering, A., Jacobshagen, N., & Meier, L. L. (2011). Does stress at work make you gain weight? A two-year longitudinal study. *Scandinavian Journal of Work, Environment & Health*, *37*, 45–53. https://doi.org/10.5271/sjweh.3089

Bies, R. J. (2015). Interactional justice: Looking backward, looking forward. In R. S. Cropanzano & M. L. Ambrose (Eds.), *Oxford handbook of justice in the workplace* (pp. 89–107). Oxford University Press.

Brockner, J., Heuer, L., Magner, N., Folger, R., Umphress, E., van den Bos, K., Vermunt, R., Wagner, M., & Siegel, P. (2003). High procedural fairness heightens the effect of outcome favorability on self-evaluations: An attributional analysis. *Organizational Behavior and Human Decision Processes*, *91*(1), 51–68. https://doi.org/10.1016/S0749-5978(02)00531-9

Brose, A., Voelkle, M. C., Lövdén, M., Lindenberger, U., & Schmiedek, F. (2015). Differences in the between-person and within-person structures of affect are a matter of degree. *European Journal of Personality*, *29*(1), 55–71. https://doi.org/10.1002/per.1961

Brown, D. J., & Zeigler-Hill, V. (2018). Self-esteem. In D. L. Ferris, R. E. Johnson, & C. Sedikides (Eds.), *The self at work: Fundamental theory and research* (pp. 40–71). Routledge.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, *86*(2), 278–321. https://doi.org/10.1006/obhd.2001.2958

Cortina, L. M., Kabat-Farr, D., Magley, V. J., & Nelson, K. (2017). Researching rudeness: The past, present, and future of the science of incivility. *Journal of Occupational Health Psychology*, *22*(3), 299–313. https://doi.org/10.1037/ocp0000089

Cropanzano, R., Byrne, Z. S., Bobocel, D. R., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior*, *58*(2), 164–209. https://doi.org/10.1006/jvbe.2001.1791

Cropanzano, R., Weiss, H. M., Hale, J. M., & Reb, J. (2003). The structure of affect: Reconsidering the relationship between negative and positive affectivity. *Journal of Management*, *29*(6), 831–857. https://doi.org/10.1016/S0149-2063(03)00081-3

De Cremer, D., & Tyler, T. R. (2005). Am I respected or not?: Inclusion and reputation as issues in group membership. *Social Justice Research*, *18*(2), 121–153. https://doi.org/10.1007/s11211-005-7366-3

Degoey, P. (2000). Contagious justice: Exploring the social construction of justice in organizations. *Research in Organizational Behavior*, *22*, 51–102. https://doi.org/10.1016/S0191-3085(00)22003-0

Dettmers, J., & Biemelt, J. (2018). Always available: The role of perceived advantages and legitimacy. *Journal of Managerial Psychology*, *33*(7/8), 497–510. https://doi.org/10.1108/JMP-02-2018-0095

Dickerson, S. S. (2008). Emotional and physiological responses to social-evaluative threat. *Social and Personality Psychology Compass*, *2*(3), 1362–1378. https://doi.org/10.1111/j.1751-9004.2008.00095.x

Eatough, E. M., Meier, L. L., Igic, I., Elfering, A., Spector, P. E., & Semmer, N. K. (2016). You want me to do what? Two daily diary studies of illegitimate tasks and employee well-being. *Journal of Organizational Behavior*, *37*(1), 108–127. https://doi.org/10.1002/job.2032

Ellard, J. H., Harvey, S., & Callan, M. J. (2016). The justice motive: History, theory, and research. In C. Sabbagh, & M. Schmitt (Eds.), *Handbook of social justice theory and research* (pp. 127–143). Springer.

Feather, N. T. (2006). Deservingness and emotions: Applying the structural model of deservingness to the analysis of affective reactions to outcomes. *European Review of Social Psychology*, *17*(1), 38–73. https://doi.org/10.1080/10463280600662321

Fila, M. J., Semmer, N. K., & Eatough, E. M. (2020). Illegitimate tasks as offense to the self. In A. M. Rossi, J. A. Meurs, & P. L. Perrewé (Eds.), *Stress and quality of working life: Finding meaning in grief and suffering* (pp. 215–234). Information Age Publishing.

Fisher, G. G., Matthews, R. A., & Gibbons, A. M. (2016). Developing and investigating the use of single-item measures in organizational research. *Journal of Occupational Health Psychology*, *21*(1), 3–23. https://doi.org/10.1037/a0039139

Folger, R., & Cropanzano, R. (2001). Fairness theory: Justice as accountability. In J. Greenberg & R. Cropanzano (Eds.), *Advances in organizational justice* (Vol. 1, pp. 1–55). Stanford University Press.

Ford, M. T., & Jin, J. (2015). Incongruence between workload and occupational norms for time pressure predicts depressive symptoms. *European Journal of Work and Organizational Psychology*, *24*(1), 88–100. https://doi.org/10.1080/1359432X.2013.858701

Gabriel, A. S., Podsakoff, N. P., Beal, D. J., Scott, B. A., Sonnentag, S., Trougakos, J. P., & Butts, M. M. (2018). Experience sampling methods: A discussion of critical trends and considerations for scholarly advancement. *Organizational Research Methods*. Advance online publication. https://doi.org/1094428118802626

Ganster, D. C., Crain, T. L., & Brossoit, R. M. (2018). Physiological measurement in the organizational sciences: A review and recommendations for future use. *Annual Review of Organizational Psychology and Organizational Behavior*, *5*(1), 267–293. https://doi.org/10.1146/annurev-orgpsych-032117-104613

Ganster, D. C., & Rosen, C. C. (2013). Work stress and employee health: A multidisciplinary review. *Journal of Management*, *39*(5), 1085–1122. https://doi.org/10.1177/0149206313475815

Gausel, N., & Leach, C. W. (2011). Concern for self-image and social image in the management of moral failure: Rethinking shame. *European Journal of Social Psychology*, *41*(4), 468–478. https://doi.org/10.1002/ejsp.803

Geurts, S. A., Schaufeli, W. B., & Rutte, C. G. (1999). Absenteeism, turnover intention and inequity in the employment relationship. *Work & Stress*, *13*(3), 253–267. https://doi.org/10.1080/026783799296057

Grebner, S., Elfering, A., & Semmer, N. K. (2010). The success resource model of job stress. *Research in Occupational Stress and Well Being*, *8*, 61–108. https://doi.org/10.1108/S1479-3555(2010)0000008005

Greenbaum, R., Bonner, J., Gray, T., & Mawritz, M. (2020). Moral emotions: A review and research agenda for management scholarship. *Journal of Organizational Behavior*, *41*(2), 95–114. https://doi.org/10.1002/job.2367

Greenberg, J. (2010). Organizational injustice as an occupational health risk. *Academy of Management Annals*, *4*(1), 205–243. https://doi.org/10.5465/19416520.2010.481174

Gross, S., Semmer, N. K., Meier, L. L., Kälin, W., Jacobshagen, N., & Tschan, F. (2011). The effect of positive events at work on after-work fatigue: They matter most in face of adversity. *Journal of Applied Psychology*, *96*(3), 654–664. https://doi.org/10.1037/a0022992

Hardecker, D. (2019). The distinctive constitution of feeling hurt: A review and a Lazarian theory. *European Psychologist*. Advance online publication. https://doi.org/10.1027/1016-9040/a000390

Hart, P. M., Wearing, A. J., & Headey, B. (1994). Perceived quality of life, personality, and work experiences: Construct validation of the police daily hassles and uplifts scales. *Criminal Justice and Behavior*, *21*(3), 283–311. https://doi.org/10.1177/0093854894021003001

Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social Psychology*, *44*(3), 355–370. https://doi.org/10.1348/014466605X37468

Hegtvedt, K. A., & Parris, C. L. (2014). Emotions in justice processes. In J. E. Stets & J. H. Turner (Eds.), *Handbook of the sociology of emotions* (Vol. II, pp. 103–125). Springer.

Hershcovis, M. S. (2011). "Incivility, social undermining, bullying … oh my!": A call to reconcile constructs within workplace aggression research. *Journal of Organizational Behavior*, *32*(3), 499–519. https://doi.org/10.1002/job.689

Hockey, G. R. J. (1997). Compensatory control in the regulation of human performance under stress and high workload: A cognitive-energetical framework. *Biological Psychology*, *45*(1-3), 73–93. https://doi.org/10.1016/S0301-0511(96)05223-4

Houdmont, J., Jachens, L., Randall, R., Hopson, S., Nuttall, S., & Pamia, S. (2019). What does a single-item measure of job stressfulness assess? *International Journal of Environmental Research and Public Health*, *16*(9). https://doi.org/10.3390/ijerph16091480

Irmer, J. P., Kern, M., Schermelleh-Engel, K., Semmer, N. K., & Zapf, D. (2019). The instrument for stress-oriented task analysis (ISTA): A meta-analysis. *German Journal of Work and Organizational Psychology*, *63*, 217–237. https://doi.org/10.1026/0932-4089/a000312

Kahn, R. L., & Byosiere, P. (1992). Stress in organizations. In D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 3, pp. 571–650). Consulting Psychologists Press.

Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). Wiley.

Kim, Y. K., & Kammeyer-Mueller, J. (2018). Antecedents and consequences of self-conscious emotions at work: Guilt, shame, and pride. *Academy of Management Proceedings*, *2018*(1), Article 14897. https://doi.org/10.5465/AMBPP.2018.14897abstract

Kottwitz, M. U., Meier, L. L., Jacobshagen, N., Kälin, W., Elfering, A., Hennig, J., & Semmer, N. K. (2013). Illegitimate tasks associated with higher cortisol levels among male employees when subjective health is relatively low: An intra-individual analysis. *Scandinavian Journal of Work, Environment & Health*, *39*(3), 310–318. https://doi.org/10.5271/sjweh.3334

Krings, R., Jacobshagen, N., Elfering, A., & Semmer, N. K. (2015). Subtly offending feedback. *Journal of Applied Social Psychology*, *45*(4), 191–202. https://doi.org/10.1111/jasp.12287

Lazarus, R. S. (1993). Why we should think of stress as a subset of emotion. In L. Goldberger & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (2nd ed., pp. 21–39). Free Press.

Leary, M. R., & Allen, A. B. (2011). Belonging motivation: Establishing, maintaining, and repairing relational value. In D. Dunning (Ed.), *Social motivation* (pp. 37–55). Psychology Press.

Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, *32*, 1–62. https://doi.org/10.1016/S0065-2601(00)80003-9

Lerner, M. J. (2003). The justice motive: Where social psychologists found it, how they lost it, and why they may not find it again. *Personality and Social Psychology Review*, *7*(4), 388–399. https://doi.org/10.1207/S15327957PSPR0704_10

Levine, L. J. (1996). The anatomy of disappointment: A naturalistic test of appraisal models of sadness, anger, and hope. *Cognition & Emotion*, *10*(4), 337–360. https://doi.org/10.1080/026999396380178

Mackey, J. D., & Perrewe, P. L. (2014). The AAA (appraisals, attributions, adaptation) model of job stress: The critical role of self-regulation. *Organizational Psychology Review*, *4*(3), 258–278. https://doi.org/10.1177/2041386614525072

McEwen, B. S., & Wingfield, J. C. (2003). The concept of allostasis in biology and biomedicine. *Hormones and Behavior*, *43*(1), 2–15. https://doi.org/10.1016/S0018-506X(02)00024-7

McIntyre, K. P., Korn, J. H., & Matsuo, H. (2008). Sweating the small stuff: How different types of hassles result in the experience of stress. *Stress and Health*, *24*(5), 383–392. https://doi.org/10.1002/smi.1190

Meara, H. (1974). Honor in dirty work: The case of American meat cutters and Turkish butchers. *Sociology of Work and Occupations*, *1*(3), 259–283. https://doi.org/10.1177/073088847400100301

Mikula, G. (2003). Testing an attribution-of-blame model of judgments of injustice. *European Journal of Social Psychology*, *33*(6), 793–811. https://doi.org/10.1002/ejsp.184

Mikula, G., Scherer, K. R., & Athenstaedt, U. (1998). The role of injustice in the elicitation of differential emotional reactions. *Personality and Social Psychology Bulletin*, *24*(7), 769–783. https://doi.org/10.1177/0146167298247009

Miller, D. T. (2001). Disrespect and the experience of injustice. *Annual Review of Psychology*, *52*(1), 527–553. https://doi.org/10.1146/annurev.psych.52.1.527

Muntz, J., Dormann, C., & Kronenwett, M. (2019). Supervisors' relational transparency moderates effects among employees' illegitimate tasks and job dissatisfaction: A four-wave panel study. *European Journal of Work and Organizational Psychology*, *28*(4), 485–497. https://doi.org/10.1080/1359432X.2019.1625888

Nicklin, J. M. (2013). Expertise, counterfactual thinking, and fairness perceptions: A test of fairness theory. *Social Justice Research*, *26*(1), 42–60. https://doi.org/10.1007/s11211-012-0173-8

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology*, *9*(2), 79–93. https://doi.org/10.1027/1866-5888/a000009

Osatuke, K., Leiter, M., Belton, L., Dyrenforth, S., & Ramsel, D. (2013). Civility, respect and engagement at the workplace (CREW): A national organization development program at the Department of Veterans Affairs. *Journal of Management Policies and Practices*, *1*(2), 25–34.

Oyserman, D., Elmore, K., & Smith, G. (2012). Self, self-concept, and identity. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 69–104). Guilford.

Peeters, M. C. W., Schaufeli, W. B., & Buunk, B. P. (1995). The role of attributions in the cognitive appraisal of work-related stressful events: An event-recording approach. *Work & Stress*, *9*(4), 463–474. https://doi.org/10.1080/02678379508256893

Perrez, M., & Reicherts, M. (1996). A computer-assisted self-monitoring procedure for assessing stress-related behavior under real life conditions. In J. F. M. Myrtek (Ed.), *Ambulatory assessment, computer-assisted psychological and psychophysiological methods in monitoring and field studies* (pp. 51–67). Hogrefe & Huber.

Pfister, I. B., Jacobshagen, N., Kälin, W., & Semmer, N. K. (2020b). How does appreciation lead to higher job satisfaction? *Journal of Managerial Psychology*, *35*(6), 465–479. https://doi.org/10.1108/JMP-12-2018-0555

Pfister, I. B., Jacobshagen, N., Kälin, W., Stocker, D., Meier, L. L., & Semmer, N. K. (2020a). Appreciation and illegitimate tasks as predictors of affective well-being: Disentangling within-and between-person effects. *Journal of Work and Organizational Psychology*, *36*(1), 63–75. https://doi.org/10.5093/jwop2020a6

Pindek, S., Demircioğlu, E., Howard, D. J., Eatough, E. M., & Spector, P. E. (2019). Illegitimate tasks are not created equal: Examining the effects of attributions on unreasonable and unnecessary tasks. *Work & Stress*, *33*(3), 231–246. https://doi.org/10.1080/02678373.2018.1496160

Pindek, S., & Spector, P. E. (2016). Organizational constraints: A meta-analysis of a major stressor. *Work & Stress*, *30*(1), 7–25. https://doi.org/10.1080/02678373.2015.1137376

Plemmons, S. A., & Weiss, H. M. (2013). Goals and affect. In E. A. Locke & G. P. Latham (Eds.), *New developments in goal setting and task performance* (pp. 117–132). Routledge.

Posner, J., Russell, J. A., & Peterson, B. S. (2005). The circumplex model of affect: An integrative approach to affective neuroscience, cognitive development, and psychopathology. *Development and Psychopathology*, *17*(3), 715–734. https://doi.org/10.1017/S0954579405050340

Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, *52*(4), 597–617. https://doi.org/10.1111/bjso.12006

Rights, J. D., & Sterba, S. K. (2020). New recommendations on the use of R-squared differences in multilevel model comparisons. *Multivariate Behavioral Research*, 568–599. https://doi.org/10.1080/00273171.2019.1660605

Robbins, J. M., Ford, M. T., & Tetrick, L. E. (2012). Perceived unfairness and employee health: A meta-analytic integration. *Journal of Applied Psychology*, *97*(2), 235–272. https://doi.org/10.1037/a0025408

Salas, E., Shuffler, M. L., Thayer, A. L., Bedwell, W. L., & Lazzara, E. H. (2015). Understanding and improving teamwork in organizations: A scientifically based practical guide. *Human Resource Management*, *54*(4), 599–622. https://doi.org/10.1002/hrm.21628

Semmer, N. K. (2000). Control at work: Issues of specifity, generality, and legitimacy. In W. J. Perrig & A. Grob (Eds.), *Control of human behavior, mental processes, and consciousness* (pp. 555–574). Erlbaum.

Semmer, N. K., Jacobshagen, N., Meier, L. L., Elfering, A., Beehr, T. A., Kälin, W., & Tschan, F. (2015). Illegitimate tasks as a source of work stress. *Work & Stress*, *29*(1), 32–56. https://doi.org/10.1080/02678373.2014.1003996

Semmer, N. K., Jacobshagen, N., Meier, L. L., & Elfering, A. H. (2007). Occupational stress research: The stress-as-offense-to-self perspective. In J. Houdmont & S. McIntyre (Eds.), *Occupational health psychology: European perspectives on research, education and practice* (Vol. 2, pp. 43–60). ISMAI Publishing.

Semmer, N. K., Meier, L. L., & Beehr, T. A. (2016). Social aspects of work: Direct and indirect social messages conveying respect or disrespect. In A. M. Rossi, J. A. Meurs, & P. L. Perrewé (Eds.), *Stress and Quality of working life: Interpersonal and occupation-based stress* (pp. 13–31). Information Age Publishing.

Semmer, N. K., Tschan, F., Jacobshagen, N., Beehr, T. A., Elfering, A., Kälin, W., & Meier, L. L. (2019). Stress as offense to self: A promising approach comes of age. *Occupational Health Science*, *3*(3), 205–238. https://doi.org/10.1007/s41542-019-00041-5

Semmer, N. K., Tschan, F., Meier, L. L., Facchin, S., & Jacobshagen, N. (2010). Illegitimate tasks and counterproductive work behavior. *Applied Psychology: An International Review*, *59*(1), 70–96. https://doi.org/10.1111/j.1464-0597.2009.00416.x

Shrout, P. E. & Lane, S. P. (2012). Psychometrics. In M. R. Mehl & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 302–320). Guilford.

Sonnentag, S., & Frese, M. (2013). Stress in organizations. In N. W. Schmitt & S. Highhouse (Eds.), *Handbook of psychology* (2nd ed., Vol. 12 Industrial and organizational psychology, pp. 560–592). Wiley. https://doi.org/10.1002/9781118133880.hop212021

Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior and organizational citizenship behavior. *Human Resource Management Review*, *12*(2), 269–292. https://doi.org/10.1016/S1053-4822(02)00049-9

Stocker, D., Jacobshagen, N., Krings, R., Pfister, I. B., & Semmer, N. K. (2014). Appreciative leadership and employee well-being in everyday working life. *German Journal of Research in Human Resource Management*, *28*(1-2), 73–95. https://doi.org/10.1177/239700221402800105

Stocker, D., Jacobshagen, N., Semmer, N. K., & Annen, H. (2010). Appreciation at work in the Swiss armed forces. *Swiss Journal of Psychology*, *69*(2), 117–124. https://doi.org/10.1024/1421-0185/a000013

Tangney, J. P. E., & Tracy, J. L. (2012). Self-conscious emotions. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., pp. 446–478). Guiford Press.

Thoits, P. A. (1991). On merging identity theory and stress research. *Social Psychology Quarterly*, *54*(2), 101–112. https://doi.org/10.2307/2786929

Tripp, T. M., & Bies, J. (2015). "Doing justice": The role of motives for revenge in the workplace. In R. Cropanzano & M. L. Ambrose (Eds.), *The Oxford handbook of justice in the workplace* (pp. 461–475). Oxford University Press.

Van Dijk, W. W., & Zeelenberg, M. (2002). Investigating the appraisal patterns of regret and disappointment. *Motivation and Emotion*, *26*(4), 321–331. https://doi.org/10.1023/A:1022823221146

Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the job-related affective well-being scale (JAWS) to investigate affective responses to work stressors. *Journal of Occupational Health Psychology*, *5*(2), 219–230. https://doi.org/10.1037/1076-8998.5.2.219

Warr, P. (2007). *Work, happiness, and unhappiness*. Lawrence Erlbaum. https://doi.org/10.4324/9780203936856

Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. *Research in Organizational Behavior*, *18*, 1–74.

Weiss, H. M., Suckow, K., & Cropanzano, R. (1999). Effects of justice conditions on discrete emotions. *Journal of Applied Psychology*, *84*(5), 786–794. https://doi.org/10.1037/0021-9010.84.5.786