

1 **Can Faith Move Mountains? How Implicit Theories about Willpower**
2 **Moderate the Adverse Effect of Daily Emotional Dissonance on Ego-**
3 **Depletion at Work and Its Spillover to the Home-Domain**

4 Recent findings have demonstrated that implicit theories about willpower (the
5 belief whether willpower relies on a limited vs. nonlimited resource) moderate
6 the ego-depletion-effect. This study examines this moderating mechanism in
7 occupational settings where employees increasingly face the unpleasant state of
8 emotional dissonance, which requires the exertion of volitional self-control. By
9 integrating findings on implicit theories about willpower, arguments brought up
10 by the strength model of self-control, and notions from the spillover literature, we
11 propose that believing in a nonlimited resource theory of willpower buffers the
12 effect of emotional dissonance on ego-depletion at work and diminishes the
13 spillover of ego-depletion from the work- to the home-domain. In a diary study
14 covering ten working days (N=71), we examine a moderated mediation model in
15 which ego-depletion at work mediates the relation between emotional dissonance
16 and ego-depletion at home and analyse whether implicit theories about willpower
17 moderate both paths (*a* and *b*) of the proposed mediation model. Our results
18 provide support for the mediation hypothesis and show that endorsing a
19 nonlimited resource theory buffers the effect of emotional dissonance on ego-
20 depletion at work, thereby disrupting the indirect effect of emotional dissonance
21 on ego-depletion at home. Subsequently, we discuss implications of holding a
22 nonlimited resource theory.

23 Keywords: diary study, ego-depletion, emotional dissonance, implicit theories
24 about willpower, strength model of self-control, work-to-home spillover

25 Consistent with the rising importance of customer satisfaction through service, actively
26 managing one's emotions to improve work outcomes is widely regarded as essential for
27 effective workplace interactions (e.g., interacting with customers by showing smiles and
28 good humour; Grandey, 2000). However, the common mantra of providing "service
29 with a smile" routinely exposes employees to situations in which their true affective
30 states may be incongruent with the organizationally desired expressions (Grandey,
31 2003). The discrepancy that occurs when an employee is required to express emotions
32 which are not genuinely felt in the particular situation is commonly referred to as
33 emotional dissonance (Zapf, 2002), a state that has been shown to predict a number of
34 adverse outcomes, such as absenteeism (Hülshager & Schewe, 2011), reduced work
35 performance (Grandey, 2003), and psychological strain (Cheung & Tang, 2007).

36 The adverse effects of coping with emotional dissonance on employees' well-
37 being and performance can be explained by research on volitional self-control (e.g.,
38 Diestel & Schmidt, 2011a; Diestel, Rivkin, & Schmidt, 2015). This line of research
39 suggests that the process of dissolving emotional dissonance necessitates suppressing
40 genuine feelings in order to express organisationally desired emotions. Therefore, in
41 order to overcome emotional dissonance, employees need to exert volitional self-
42 control, which involves inhibiting, altering, and overriding automatic or habitual
43 responses (e.g., Gailliot & Baumeister, 2007). According to the strength model of self-
44 control, these processes can be thought of as effortful internal acts, which deplete a
45 common regulatory resource capacity and thereby leave it less available for further
46 volitional self-control (e.g., Muraven & Baumeister, 2000; Gailliot & Baumeister,
47 2007). Thus, resolving emotional dissonance (i.e., suppression of genuine- and
48 expression of organisationally desired emotions) on a regular basis necessitates
49 prolonged exertion of volitional self-control, which reduces the capacity for further self-

50 control – a state referred to as *ego-depletion* (Baumeister, Bratslavsky, Muraven, &
51 Tice, 1998).

52 In awareness of these findings and their relevance for organisations, many
53 scholars have analysed emotional dissonance and associated ego-depletion effects
54 directly at the workplace. While initial studies on emotional dissonance have adopted a
55 between-person approach to explain why some employees (e.g., frontline employees,
56 Rafaeli & Sutton, 1987; nurses, Schmidt & Diestel, 2014) experience higher levels of
57 emotional dissonance than others, recent studies have revealed that emotional
58 dissonance also varies between workdays (within-person). For instance, a daily diary
59 study conducted by Diestel and colleagues (2015) revealed that on workdays
60 characterized by higher emotional dissonance than usual (e.g., more frequent customer
61 interactions), employees report increased ego-depletion in comparison to days with
62 lower levels of emotional dissonance. Only recently, this notion has been further
63 expanded by Germeys and de Gieter (2018), who demonstrated that exerting volitional
64 self-control on a specific workday does not only manifest in day-specific ego-depletion
65 at work, but also affects employees' experiences of ego-depletion later at home. In other
66 words, it has been shown that adverse consequences of exerting volitional self-control at
67 work spill over to the home-domain, thereby influencing employees' levels of ego-
68 depletion after work.

69 Another line of research extends knowledge on ego-depletion by focusing on
70 *implicit theories about willpower*. According to a series of studies, people differ in their
71 implicit theories whether willpower – the capacity to exert volitional self-control –
72 relies on a limited vs. nonlimited resource (Job, Dweck, & Walton, 2010). While some
73 people believe that willpower relies on a limited resource that is easily used up and
74 needs to be replenished after a strenuous mental activity (i.e., limited resource theory;

75 Job et al., 2010), others believe that willpower is nonlimited, implying that it is not
76 easily used up and can even be fuelled by exerting volitional self-control (i.e.,
77 nonlimited resource theory; Job et al., 2010). In a variety of studies, implicit theories
78 about willpower have been shown to moderate the extent to which self-control
79 performance decreases after previous acts of self-control (Job et al., 2010), influences
80 the acquisition of cognitive skills (Miller et al., 2012), and predicts effective goal
81 striving of students (Bernecker & Job, 2015). These studies have come to the conclusion
82 that believing in a nonlimited resource theory of willpower prevents (at least to some
83 degree) the ego-depletion effect after exerting volitional self-control and supports
84 people to sustain self-control, whereas believing in a limited resource theory leads to
85 reversed effects.

86 The basic tenor of this research is that a person's implicit theory about
87 willpower reflects a relatively stable individual trait, which is supported by two field
88 studies that validated its middle-term stability over a time period of two months (Job et
89 al., 2010, Study 4) and its long-term stability over a time period of six months
90 (Bernecker, Herrmann, Brandstätter, & Job, 2015, Study 2). On the other hand,
91 laboratory studies have shown that this implicit theory might also be shaped (at least
92 partially) by external information (such as experimental manipulation; e.g., Job et al.,
93 2010), but this variability has not been replicated in settings outside the laboratory.
94 Thus, in the study at hand, we define implicit theories about willpower as a stable
95 individual characteristic and examine how this trait-like belief affects everyday self-
96 control processes at work. Therefore, the current study intends to broaden empirical
97 knowledge on implicit theories about willpower (e.g., Job et al., 2010), volitional self-
98 control (e.g., Diestel & Schmidt, 2011a), and spillover (e.g., Germeys & de Gieter,
99 2018) by analysing the buffering role of believing in a nonlimited resource theory on the

100 relation between emotional dissonance and ego-depletion throughout a workday. For
101 this purpose, we adopt a multilevel approach to test a moderated mediation model (see
102 Figure 1): First, emotional dissonance is proposed to adversely affect ego-depletion at
103 work and at home. Second, the adverse effect of emotional dissonance on ego-depletion
104 at home is suggested to be mediated by ego-depletion at work. Third, believing in
105 willpower as a nonlimited resource is predicted to buffer the day-specific effect of
106 emotional dissonance on ego-depletion at work and (fourth) to further buffer the day-
107 specific spillover of ego-depletion from work to home. Fifth, it is hypothesized that the
108 positive indirect relation between emotional dissonance and ego-depletion at home via
109 ego-depletion at work is moderated (attenuated) for those employees who believe in a
110 nonlimited resource theory.

111 --- Please insert Figure 1 about here ---

112 By examining this model, we aim to contribute to theory and practice in at least
113 three ways. First, past research has only paid little attention to the underlying
114 mechanisms that explain how adverse consequences from experiencing emotional
115 dissonance at work spill over to employees' states in the evening at home, when
116 emotional dissonance is no longer present (Zhang, Zhang, Lei, Yue, & Zhu, 2016).
117 Therefore, we intend to broaden empirical knowledge on spillover effects (e.g., Bakker
118 & Geurts, 2004; Germeys & de Gieter, 2018; Ilies et al., 2007) by proposing and testing
119 a potential underlying psychological mechanism that links emotional dissonance at
120 work to experiences of ego-depletion at home. We believe that analysing how
121 consequences of coping with emotional dissonance transcend the work-boundary and
122 affect ego-depletion at home is an important step towards understanding the daily
123 depletion process and fostering replenishment of the regulatory resource for employees
124 working in customer-oriented occupations.

125 Second, studies on implicit theories about willpower predominantly measured
126 self-control processes at the between-person level in laboratory settings (exceptions
127 being Bernecker & Job, 2015; Bernecker et al., 2015, Study 3). While this research
128 expanded our understanding of the basic mechanisms of implicit theories about
129 willpower, we believe that transferring these insights into the occupational field and
130 analysing them from a daily perspective could enhance the external validity of previous
131 findings. By adopting a daily diary approach, we intend to examine state levels and
132 changes in ego-depletion during the day, thereby capturing the dynamic aspects of
133 employees' ego-depletion levels from a within-person perspective. In line with
134 Hamaker's suggestion (2012; see also Fisher & To, 2012) that relations on the between-
135 and within-person level may significantly vary in size and even direction, utilizing a
136 diary approach for studying the interplay of coping with emotional dissonance, state
137 levels of ego-depletion, and implicit theories about willpower (as a trait-like individual
138 characteristic) could allow identifying more fine grained differences in resource
139 allocation that occur on the within-level and could further contribute to a better
140 understanding of the causality of these effects (Xanthopoulou, Bakker, & Ilies, 2012).
141 Since implicit theories have been shown to be sensitive to the influence of external
142 information and have been proposed to be shaped by organisational climate (Dweck,
143 2006), understanding how employees' implicit theories (i.e. believing in a limited vs.
144 nonlimited resource theory) affect regulatory resource depletion effects (and as such,
145 performance on further tasks that require the exertion of volitional self-control) might
146 provide valuable implications for managerial practice.

147 Third, a vast majority of research has examined the moderating effect of implicit
148 theories about willpower only on the immediate consequences of exerting volitional
149 self-control. These studies have largely focused on analysing the performance reduction

150 *directly* after engaging in an initial self-control task (e.g., Job et al., 2010). However,
151 until now, it remains unclear whether implicit theories about willpower also affect
152 enduring experiences of ego-depletion, once the regulatory resource has already been
153 depleted. As past research indicates that implicit theories about willpower shape how
154 individuals allocate resources and how they monitor signs of ego-depletion (Job,
155 Walton, Bernecker, & Dweck, 2013; Job, Bernecker, Miketta, & Friese, 2015), they
156 might also affect whether experiences of ego-depletion endure over a workday and
157 whether these experiences spill over from the work- to the home-domain. The current
158 study intends to shed light on this proposition, thereby examining if believing in a
159 nonlimited resource theory facilitates coping with everyday emotional dissonance *and* if
160 it further affects whether the depleted regulatory resource becomes replenished after
161 work. By incorporating the spillover literature (e.g., Germeys & de Gieter, 2018; Bakker
162 & Geurts, 2004) and findings on implicit theories about willpower (e.g., Job et al.,
163 2010), we go beyond past research and analyse the benefits of holding a nonlimited
164 resource theory throughout a workday.

165 **Emotional Dissonance as a Job Stressor**

166 Over the last decades, emotion-regulation has become one of the most widely studied
167 antecedents of ego-depletion (Lian, Yam, Ferris, & Brown, 2017). In this field of
168 research, emotional dissonance is what has been seen as problematic right from the
169 beginning (Hochschild, 1983; Zapf, 2002), because it is considered as a job demand that
170 exposes employees to situations where they need to resolve the discrepancy between felt
171 emotions and desired expressions of emotions (Zapf, Vogt, Seifert, Mertini, & Isic,
172 1999; Zapf, 2002). For instance, when an eliciting event (e.g., rudeness of a customer)
173 has already triggered an undesirable emotional response (e.g., anger), this affective state
174 is in contrast to the required emotional display (e.g., being friendly and supportive).

175 In order to dissolve this unpleasant state, the process of coping with emotional
176 dissonance requires continuous monitoring of felt and required emotions, inhibition or
177 suppression of experienced emotions, and a continuous altering of the emotional
178 expression (Konze, Rivkin, & Schmidt, 2017; Schmidt & Diestel, 2014). Consequently,
179 several scholars have considered these processes from a self-control perspective and
180 have described them as effortful internal acts of response-focused emotion-regulation,
181 which involve the exertion of volitional self-control (Zapf & Holz, 2006; Diestel &
182 Schmidt, 2011a; Diestel & Schmidt, 2011b). This line of research has adopted the
183 theoretical framework of the strength model of self-control (Muraven & Baumeister,
184 2000) to explain the underlying mechanisms through which emotional dissonance
185 adversely affects employees' psychological well-being. Accordingly, in order to bring
186 expressed emotions in line with organizationally required emotions, employees need to
187 override automatic responses and are required to act out of sync with their natural
188 tendencies, thereby taxing the regulatory resource and manifesting in heightened levels
189 of ego-depletion. And indeed, several studies have revealed that exaggerating a required
190 emotional display and suppressing true feelings cause ego-depletion and impair
191 subsequent self-control processes (Schmeichel, Vohs, & Baumeister, 2003; Schmeichel,
192 2007). Thus, coping with emotional dissonance is associated with psychological costs
193 that manifest in short-term consequences, such as ego-depletion, and in long-term
194 consequences, such as impaired psychological well-being (e.g., burnout symptoms,
195 Konze et al., 2017) and absenteeism from the workplace (Diestel & Schmidt, 2011a).

196 Thus, there is broad evidence that coping with emotional dissonance at work
197 immediately leads to ego-depletion effects and also relates to heightened values of ego-
198 depletion after work (Diestel et al., 2015). In line with these findings, we predict that
199 coping with emotional dissonance involves the exertion of volitional self-control,

200 thereby taxing a regulatory resource, which directly manifests in ego-depletion (at work
201 and at home) as decrements of this resource. By adopting a diary study approach, we
202 examine these predictions from a within-person perspective and analyse how
203 fluctuations in day-to-day emotional dissonance relate to day-to-day fluctuations in ego-
204 depletion.

205 *Hypothesis 1:* Day-specific emotional dissonance is positively related to day-
206 specific ego-depletion (a) at work and (b) at home.

207

208 While the relationship between emotional dissonance and ego-depletion has
209 already received some empirical attention, less attention has been paid to *how* the
210 adverse consequences of emotional dissonance spill over from the work- to the home-
211 domain (Zhang et al., 2016). In the context of the current study, we define daily
212 spillover as the within-person mechanism that links these two domains of everyday life
213 in a way that psychological states transfer from the work- to the home-domain
214 (Lambert, 1990). More specifically, in line with Edwards and Rothbard's (2000)
215 conceptualisation of spillover effects, the current study focuses on examining the
216 *resource drain* effect. This specific effect is characterized by an adverse, direct
217 relationship between the work- and the home-domain, so that drawing from a finite
218 resource in one domain reduces the availability of this resource in the other domain
219 (Edwards & Rothbard, 2000). This theoretical proposition ties in with notions from the
220 strength model of self-control (Muraven & Baumeister, 2000), suggesting that once the
221 regulatory resource has been depleted, the resource takes time to replenish, so that the
222 experience of ego-depletion will linger (Baumeister & Vohs, 2016). In support of this
223 prediction, a recent study conducted by Germeys and de Gieter (2018) has demonstrated
224 that the adverse effect of having exerted volitional self-control previously at work

225 endures over some time and transcends the work-domain, leading to heightened levels
226 of ego-depletion at work and at home. The strength model of self-control (Muraven &
227 Baumeister, 2000) further predicts that the state of ego-depletion endures until
228 replenishment of the depleted regulatory resource is possible. However, research on
229 recovery indicates that experiencing emotional dissonance at work impedes recovery
230 possibilities after work (Sonnentag, Kuttler, & Fritz, 2010; Volmer, Binnewies,
231 Sonnentag, & Niessen, 2012; Xanthopoulou, Bakker, Oerlemans, & Koszucka, in
232 press). Consequently, we propose that after experiencing a workday with high emotional
233 dissonance, the process of replenishing the depleted regulatory resource after work is
234 protracted, so that experiences of ego-depletion endure after work and spill over to the
235 home-domain.

236 By incorporating notions from the strength model of self-control (Muraven &
237 Baumeister, 2000), propositions from the spillover literature (Edwards & Rothbard,
238 2000), and recent findings on recovery after work (e.g., Sonnentag et al., 2010;
239 Xanthopoulou et al., in press), we propose ego-depletion at work as a mediator that
240 links emotional dissonance at work to ego-depletion at home. Thus, we predict that once
241 the regulatory resource has been depleted, this state of ego-depletion persists over some
242 time until replenishment of the resource is possible, thereby causing a spillover of ego-
243 depletion to the home-domain.

244 *Hypothesis 2:* The day-specific positive relationship between emotional
245 dissonance and ego-depletion at home is mediated by ego-depletion at work.

246 **Implicit Theories about Willpower as a Moderator of the Ego-Depletion** 247 **Effect**

248 Previous research indicates that implicit theories about willpower influence how people
249 react to demands on volitional self-control and affect the ego-depletion effect. This

250 stream of research suggests that endorsing a nonlimited resource theory (i.e., the belief
251 that the regulatory resource is not easily depleted and refuels itself) is associated with a
252 variety of beneficial outcomes, whereas holding a limited resource theory (i.e., the
253 belief that the regulatory resource is easily depleted and needs rest to recover) is
254 detrimental to subsequent self-control performance and subjective well-being (Job et al.,
255 2010; Bernecker et al., 2015). First evidence for the benefits of believing in a
256 nonlimited resource theory was provided by Martijn, Tenbült, Merckelbach, Dreezens,
257 and de Vries (2002), who found that peoples' theory of the consequences of self-control
258 moderated performance reduction after self-control exertion. That is, participants who
259 were told that performing an effortful task (controlling their emotions) would improve
260 performance on a subsequent task, did not show decreases in subsequent self-control
261 performance. Drawing on this evidence, Job et al. (2010) introduced the concept of
262 implicit theories about willpower to account for these findings. In a series of laboratory
263 studies, the authors demonstrated that only participants who held or who were led to
264 hold a limited resource theory showed ego-depletion effects after exerting self-control,
265 whereas endorsing a nonlimited resource theory diminished the ego-depletion effect.
266 Moreover, a field study that examined students' self-control performance revealed that
267 students who held a nonlimited resource theory were better able to exert self-control in
268 phases of high demands on self-control than students who held a limited resource theory
269 (Job, Walton, Bernecker, & Dweck, 2015).

270 In an attempt to uncover the underlying psychological process that might
271 account for these empirical findings, scholars have discussed the role of implicit
272 theories about willpower in monitoring and conserving regulatory resources (e.g., Job et
273 al., 2013; Baumeister & Vohs, 2016). They have drawn from theoretical extensions of
274 the strength model of self-control, suggesting that the tendency to conserve some of the

275 regulatory resource is involved in the ego-depletion effect (Baumeister, Muraven, &
276 Tice, 2000). More specifically, Baumeister and Vohs (2016) argue that there are
277 psychological systems that monitor consumption of the regulatory resource and inhibit
278 further allocation of depleted resources when current allocations occur at an
279 unsustainable rate. By integrating these theoretical notions from the strength model of
280 self-control (Muraven & Baumeister, 2000) and empirical findings on implicit theories
281 about willpower (Job et al., 2010), it has been suggested that people endorsing a limited
282 vs. nonlimited resource theory primarily differ from each other in how intensively they
283 monitor consumption of their regulatory resource and to what extent they aim to
284 conserve what remains of the regulatory resource (e.g., Job et al., 2013; Baumeister &
285 Vohs, 2016).

286 In line with these propositions, we assume that when people believe that
287 willpower relies on a highly limited resource that becomes easily depleted and is
288 already impaired even after one strenuous mental activity, they will monitor the
289 availability of the regulatory resource more intensively, because they expect decrements
290 in this resource. Consequently, we expect them to be more sensitive to cues for ego-
291 depletion and to realize sooner that they are getting ego-depleted. On the other hand, we
292 assume that when people believe that willpower relies on a nonlimited resource, they do
293 not have the urge to monitor levels of ego-depletion, because they do not expect that
294 exerting volitional self-control on a strenuous mental activity diminishes any resource.

295 Applying these proposed underlying psychological mechanisms to the current
296 study, we argue that employees holding a nonlimited resource theory will not expect to
297 become ego-depleted, even when daily demands on emotional dissonance exceed their
298 personal average. Coping with emotional dissonance is thus hypothesized to manifest in
299 smaller decrements of the regulatory resource, because employees believing in a

300 nonlimited resource theory perceive themselves as having sufficient resources to deal
301 with accumulating daily emotional dissonance (i.e., plenty customer complaints). On the
302 contrary, we suggest that employees holding a limited resource theory expect to become
303 ego-depleted after exerting even a slight amount of mental effort, such as dealing with a
304 single customer complaint. Thus, on days when emotional dissonance occurs more often
305 than usual, employees holding a limited resource theory should be more vigilant for
306 cues of ego-depletion, and consequently, will act as though their regulatory resource is
307 depleted long before it reaches an actual limit. Therefore, we predict:

308 *Hypothesis 3:* Person-level implicit theories about willpower moderate the day-
309 specific positive relationship between emotional dissonance and ego-depletion at
310 work: The intraindividual relationship is amplified the more people believe that
311 willpower relies on a limited resource.

312

313 In line with the assumption that people holding a limited vs. a nonlimited
314 resource theory differ from each other in how intensively they aim to conserve what
315 remains of the diminished resource after exerting self-control, first laboratory findings
316 show that the exertion of volitional self-control activates the goal to conserve the
317 remaining resource and promotes the orientation towards rest especially in people with a
318 limited resource theory (Job, Bernecker et al., 2015). Thus, there is initial evidence
319 indicating that people believing in willpower as relying on a limited resource turn
320 towards rest or inactivity after exerting volitional self-control. However, research on
321 recovery suggests that inactivity or low-effort activities (such as relaxing on the sofa or
322 doing nothing) may be considered as dysfunctional recovery strategies, as these
323 activities have little or no effect on the replenishment of a depleted resource (Sonnentag
324 & Natter, 2004; Rook & Zijlstra, 2006). Active leisure activities (physical activities,

325 creative activities, and social activities; Sonnentag, 2001), on the other hand, have
326 repeatedly been shown to exert a stronger effect on the replenishment of a depleted
327 resource (e.g., Sonnentag & Natter, 2004; van Hooff, Geurts, Beckers, & Kompier,
328 2011; Oerlemans, Bakker, & Demerouti, 2014) and thus, could be considered a more
329 functional recovery strategy.

330 Therefore, we propose that people endorsing a limited resource theory develop a
331 stronger need to conserve their resource once this resource has been diminished
332 previously. Building on empirical evidence (Job, Bernecker et al., 2015), we predict that
333 people endorsing a limited resource theory turn towards rest and inactivity (long before
334 it might be necessary) in order to conserve what remains of this diminished resource.
335 However, as we presume that this recovery strategy is less effective for replenishing the
336 depleted resource (e.g., Rook & Zijlstra, 2006; Sonnentag & Natter, 2004), the state of
337 feeling depleted might even be prolonged for people holding a limited resource theory.
338 On the contrary, we suggest that believing in a nonlimited resource theory removes the
339 perceived need to conserve a depleted resource (why conserving something that is
340 nonlimited?), thereby breaking a process that undermines self-control performance and
341 encouraging people to continue to allocate resources (Job, Bernecker et al., 2015;
342 Baumeister & Vohs, 2016). Consequently, believing in a nonlimited resource theory and
343 as such, a belief of having sufficient resources, is proposed to remove the orientation
344 towards rest and inactivity, in that way enabling individuals to replenish their depleted
345 resource in a more functional manner by conducting active leisure activities.

346 Applying this proposed underlying framework to the current study, we suggest
347 that employees endorsing a nonlimited resource theory adopt a more functional
348 recovery strategy in order to replenish the depleted regulatory resource, thereby
349 reducing the spillover of ego-depletion from the work- to the home-domain. On the

350 other hand, we predict that employees endorsing a limited resource theory are more
351 likely to adopt dysfunctional recovery strategies (i.e., by turning towards inactivity),
352 thereby prolonging the state of feeling depleted instead of actively replenishing the
353 depleted regulatory resource. For these employees, ego-depletion is proposed to linger
354 and to spill over from the work- to the home-domain. Thus, it is hypothesized:

355 *Hypothesis 4:* Person-level implicit theories about willpower moderate the day-
356 specific positive relationship between ego-depletion at work and ego-depletion
357 at home: The intraindividual spillover from work to home is amplified the more
358 people believe that willpower relies on a limited resource.

359

360 Building on the assumptions that holding a nonlimited resource theory (a)
361 attenuates the relation between emotional dissonance and ego-depletion at home and (b)
362 diminishes the spillover of ego-depletion from the work- to the home-domain, we
363 predict that the positive indirect effect of emotional dissonance on ego-depletion at
364 home will be reduced for employees endorsing a nonlimited resource theory. Hence, we
365 hypothesize:

366 *Hypothesis 5:* Person-level implicit theories about willpower moderate the day-
367 specific mediated (indirect) relationship between emotional dissonance and ego-
368 depletion at home: The positive mediated relationship is attenuated the more
369 people believe that willpower relies on a nonlimited resource.

370 **Method**

371 *Research design and participants*

372 Over the course of some years, contact information of service employees who had
373 expressed their willingness to take part in a scientific study were collected (via social

374 networks, personal contacts, and public advertisements). For the purpose of this study,
375 these employees were approached and asked to participate in this diary study. As a
376 result, 71 employees from various organisations in Germany with regular contact to
377 customers, clients, or patients at work registered for the study (occupations ranged from
378 salespersons and consultants to kindergarten teachers and care institutions). Among
379 these participants, 59% were female, 18% worked part-time (part-time employees in
380 this study worked less days per week, but only had full working days, which were
381 included in the analyses), and the mean age of the participants was 40.23 (SD = 13.51)
382 years. The whole process of data collection was conducted electronically via an online
383 survey platform that allowed participants to fill out the surveys on smartphones, tablets,
384 or personal computers. In advance of the day-specific measurements, participants
385 responded to a general questionnaire that assessed biographical variables and person-
386 level constructs (e.g., implicit theories about willpower). After that, over a period of 10
387 consecutive working days, participants received e-mails two times per day (in the
388 afternoon at work and in the evening at home) in order to answer day-specific
389 questionnaires. In the afternoon at work (1:00 p.m.), participants received an e-mail
390 asking them to report emotional dissonance and ego-depletion. In the evening at home
391 (7:00 p.m.), another email with an invitation to rate ego-depletion was sent. After
392 receiving the e-mails, the surveys were accessible for six hours. If participants did not
393 react to the survey within the first two hours, a reminder for participation was sent. On
394 average, the surveys were completed at 2:47 p.m. at work and at 8:35 p.m. at home. On
395 weekends or public holidays, the diary study was suspended and continued the next
396 regular working day. Participation was voluntary as well as anonymous and data across
397 measurements were matched via an anonymous code. The completion of the diary study
398 was compensated for by 50 Euro (information about completion of surveys and actual

399 data were gathered separately). Overall, response rate to our daily questionnaires was
400 93.7%, resulting in 665 (out of 710) day-specific measurements.

401 *Measures and control variables*

402 The general questionnaire included implicit theories about willpower as study variable
403 and age, gender, and self-control capacity as control variables. Age and gender were
404 assessed and included in the analyses to control for their potential confounding
405 influence. Moreover, we controlled for self-control capacity as an individual trait,
406 because it has been found to influence the appraisal of stressors (like emotional
407 dissonance) and strain (Schmidt, Hupke, & Diestel, 2012). In the day-specific
408 questionnaires, we explained that the items of emotional dissonance refer to situations
409 within the last hours of work, while the items of ego-depletion refer to momentary
410 experiences.

411 *Self-control capacity.* We assessed self-control capacity as an individual trait
412 with a 17-item version of Tangney, Baumeister, and Boone's (2004) self-control
413 capacity scale (e.g., "People would say that I have iron self-discipline."). All items were
414 scored using a 5-point intensity-rating format (1 = *not at all*; 5 = *very much*).

415 *Implicit theories about willpower.* To measure person-specific implicit theories
416 about willpower, we used Job et al.'s (2010) strenuous mental activity scale. A typical
417 (reversed) item is "When you have been working on a strenuous mental task, you feel
418 energized and you are able to immediately start with another demanding activity."
419 Participants responded using a six-point intensity-rating format (1 = *strongly disagree*; 6
420 = *strongly agree*), whereas higher values represent greater agreement with a limited
421 resource theory.

422 *Emotional dissonance (at work).* The measurement of day-specific emotional
423 dissonance was based on five items that assessed the frequency of experienced

424 discrepancies between felt emotions and those required by the job role *within the last*
425 *hours of work* (e.g., “Within the last hours at work, how often did you have to show
426 feelings that you did not really feel?”). The items were adapted from the Frankfurt
427 Emotion Work Scales (Zapf et al., 1999). Some questions were slightly modified by
428 asking specifically about interactions with colleagues, patients, and customers.
429 Participants responded using a five-point intensity-rating format (1 = *never*; 5 = *very*
430 *often*).

431 *Ego-depletion (at work and at home)*. We assessed day-specific ego-depletion
432 using five items related to the participant’s *current* experiences with resource depletion
433 (e.g. “At the moment, I feel increasingly less able to focus on anything.”). The scale was
434 developed and validated by Bertrams, Unger, and Dickhäuser (2011), who intended to
435 assess the temporary affective state of ego-depletion proposed by Muraven and
436 Baumeister (2000). All items were scored using a four-point intensity-rating format (1 =
437 *not at all*; 4 = *a great deal*).

438 ***Construct Validity of Day-Level Variables***

439 We conducted multilevel confirmatory factor analyses (MCFAs) to test the
440 psychometrical distinctiveness of our day-level variables. We tested a three-factor
441 measurement model including all three day-level variables of the present study as
442 distinct factors (emotional dissonance, ego-depletion at work, and ego-depletion at
443 home). Fit indices for this model showed a satisfactory fit ($\chi^2(174) = 620.74, p < .01$;
444 root mean square error of approximation (RMSEA) = .061; comparative fit index (CFI)
445 = .934; standardized root mean square residual within-person/between-person
446 (SRMRw/SRMRb) = .030/.059).

447 *Analytical procedure*

448 We used multilevel structural equation modelling in Mplus 7 (Muthén & Muthén, 1998-
449 2017), because the day-level data (level 1) were nested within the person-level data
450 (level 2), and this procedure takes the interdependence of both levels into account (Hox,
451 2002). In a first step (in order to test Hypotheses 1 and 2), we specified a 1-1-1
452 mediation model (Preacher, Zyphur, & Zhang, 2010), in which ego-depletion at work
453 mediates the adverse effects of emotional dissonance on ego-depletion at home. To test
454 this multilevel mediation with all study variables assessed at the day-level, we followed
455 Preacher and colleagues' procedure and tested a random-intercept fixed-slope model
456 (Preacher et al., 2010; Preacher, Zhang, & Zyphur, 2011). In line with the analysis
457 approach described by Hülshager and colleagues (2014), within-person and between-
458 person relations were analysed simultaneously, whereas coefficients at level 1 indicate
459 pure within-person relationships and coefficients at level 2 indicate pure between-
460 person relationships. Thus, the decomposition into within-person and between-person
461 relations is such that it "can be viewed as an implicit, latent group-mean centring of the
462 latent within-level covariate" (Muthén & Muthén, 1998 –2017; p. 243).

463 In a second step, we specified a moderated mediation model to examine the
464 moderating effect of implicit theories about willpower on the day-level relation between
465 emotional dissonance and ego-depletion (Hypotheses 3, 4, and 5). In this model, we
466 defined the slope of emotional dissonance on ego-depletion at work (path a) and the
467 slope of ego-depletion at work on ego-depletion at home (path b) as random, as these
468 relations were hypothesized to vary as a function of implicit theories about willpower.
469 Subsequently, we added implicit theories about willpower as a predictor of the random
470 slopes. Since the focus of this analysis was to examine day-specific effects, we centred
471 emotional dissonance around the person mean (group-mean centring; Enders & Tofghi,
472 2007), whereas implicit theories about willpower and ego-depletion at work were

473 centred around the grand mean (grand-mean centring). This procedure allows to
474 exclusively test the moderating effect on the within-person-/day-level (Ohly, Sonnentag,
475 Niessen, & Zapf, 2010; van de Pol & Wright, 2009). All paths between the study
476 variables were modelled using robust maximum likelihood method of estimation.

477 **Results**

478 Table 1 displays the descriptive statistics, internal consistencies (Cronbach's alpha), and
479 correlations among the study variables. The proportion of within-person variation in
480 ego-depletion was 54.8% at work and 52.2% at home, indicating that due to high levels
481 of day-specific fluctuations, the application of multi-level modelling is necessary.

482 --- Please insert Table 1 about here ---

483 *Mediating effect of ego-depletion at work*

484 Hypothesis 1 proposed that day-specific emotional dissonance is positively related to
485 ego-depletion (a) at work and (b) at home. In support of Hypothesis 1, the results
486 indicate that emotional dissonance is positively related to (a) ego-depletion at work
487 (between-level: $\beta = 0.41$, $p < .01$; within-level: $\beta = 0.15$, $p < .01$; cf. Table 2), as well as
488 to (b) ego-depletion at home (between-level: $\beta = 0.26$, $p < .01$; within-level: $\beta = 0.08$, p
489 $< .05$). In a next step, we included ego-depletion at work to predict ego-depletion at
490 home, thereby testing the proposed mediating mechanism. In line with Hypothesis 2, the
491 results show that ego-depletion at work is positively related to ego-depletion at home
492 (between-level: $\beta = 0.82$, $p < .01$; within-level: $\beta = 0.39$, $p < .01$), while emotional
493 dissonance is no longer related to ego-depletion at home (between-level: $\beta = -0.08$, $n.s.$;
494 within-level: $\beta = 0.02$, $n.s.$). Moreover, this mediation model provided a good model fit
495 ($\chi^2(3) = 5.81$, $n.s.$, RMSEA = .037, CFI = .983, SRMRw/b = .000/.086). In addition,
496 pseudo- R^2 statistics (Raudenbush & Bryk, 2002) were calculated to obtain an indication

497 of the portion of explained variance (cf. Table 2).

498 For analysing the indirect (mediating) effect of ego-depletion at work, as
499 proposed by Hypothesis 2, we utilized the Monte Carlo re-sampling method to estimate
500 the appropriate confidence intervals for the indirect effect, because bootstrapping cannot
501 be applied to multilevel analyses (Preacher & Selig, 2012; van der Leeden, Meijer, &
502 Busing, 2008). More specifically, we computed bias-corrected 95% confidence intervals
503 (CIs) for the indirect effect based on 20,000 re-samples using the software provided by
504 Selig and Preacher (2008). In support of Hypothesis 2, the CI for the indirect effect of
505 ego-depletion at work in the relation of emotional dissonance and ego-depletion at home
506 did not include zero for the within-person part of our model ($\beta = 0.06$ [CI: 0.03:0.08]).
507 Thus, ego-depletion at work *fully* mediates the day-specific relation of emotional
508 dissonance and ego-depletion at home. Moreover, Table 2 also indicates a significant
509 indirect effect for the between-person part of our model ($\beta = 0.34$ [CI: 0.16:0.55]). This
510 result implies that the mediating effect of ego-depletion at work is also present in the
511 relation between cumulative emotional dissonance and ego-depletion at home
512 aggregated across ten days.

513 Taken together, results of the mediation analysis demonstrate that day-specific
514 emotional dissonance increases day-specific ego-depletion at work, which in turn spills
515 over and manifests in ego-depletion at home. Furthermore, the adverse effect of
516 emotional dissonance on ego-depletion at home is fully mediated by ego-depletion at
517 work.¹

518 --- Please insert Table 2 about here ---

¹ In order to account for potential day effects in the analyses, we re-ran our analyses by including day-of-week dummy coded variables. Including these control variables did not change the pattern of results.

519 ***Moderating effect of implicit theories about willpower***

520 To further test whether implicit theories about willpower moderate the day-specific
521 relation between emotional dissonance and ego-depletion at work (Hypothesis 3) and
522 the day-specific spillover of ego-depletion from work to home (Hypothesis 4), we
523 specified the slope of emotional dissonance on ego-depletion at work (path a) and the
524 slope of ego-depletion at work on ego-depletion at home (path b) as random.
525 Subsequently, we added implicit theories about willpower as a predictor of these
526 random slopes. Because traditional fit indices are not applicable to random slope
527 models, we tested whether the model fit was improved by conducting a Log-likelihood
528 ratio test, as suggested by Muthén and Muthén (1998-2017). The results of this test
529 show that compared to the mediation model, the moderated mediation model yields an
530 improved data fit ($\Delta\log\text{-likelihood}(df) = 98.78 (6); p < .01$).

531 --- Please insert Table 3 about here ---

532 Results indicate a positive effect of implicit theories about willpower on the
533 slope between emotional dissonance and ego-depletion at work (within-level: $\beta = 0.07$,
534 $p < .01$; cf. Table 3), thereby providing support for Hypothesis 3. To facilitate the
535 interpretation of the interaction effect, we depicted the interaction effect and performed
536 simple slope tests, as recommended by Preacher, Curran, and Bauer (2006). Figure 2
537 suggests that emotional dissonance relates positively to ego-depletion at work only for
538 those who believe that willpower relies on a limited resource ($\gamma = .20, p < .01$), while
539 the relationship is non-significant for those who believe that willpower relies on a
540 nonlimited resource ($\gamma = .06, n.s.$). Thus, results provide support for Hypothesis 3.

541 --- Please insert Figure 2 about here ---

542 Hypothesis 4 proposed that implicit theories about willpower moderate the day-
543 specific spillover of ego-depletion from home to work. However, as presented in Table

544 3, our results reveal that there is no significant effect of implicit theories about
545 willpower on the slope between ego-depletion at home and ego-depletion at work
546 (within-level: $\beta = 0.03$, *n.s.*). This finding is inconsistent with Hypothesis 4.

547 Finally, we tested whether our results provide evidence for the proposed
548 moderated mediation model (Hypothesis 5) by analysing whether the mediating
549 (indirect) effect of ego-depletion at work varies as a function of implicit theories about
550 willpower. Thus, we examined conditional indirect effects of emotional dissonance on
551 ego-depletion at home (via ego-depletion at work) at three values for implicit theories
552 about willpower. More specifically, we computed 95% CIs of the indirect effect for
553 people holding a nonlimited resource theory (one standard deviation below the mean of
554 implicit theories about willpower), for people holding a limited resource theory (one
555 standard deviation above the mean of implicit theories about willpower), and for people
556 with an indecisive resource theory (mean level of implicit theory about willpower). For
557 people holding an indecisive or a limited resource theory, the indirect effect of
558 emotional dissonance on ego-depletion at home via ego-depletion at work was
559 significant (indecisive resource theory: $\beta = 0.05$ [CI: 0.02:0.08]; limited resource
560 theory: $\beta = 0.08$ [CI: 0.04:0.12]; cf. Table 3). In contrast, for people with a nonlimited
561 resource theory, this indirect effect was not significant ($\beta = 0.03$ [CI: -0.01:0.05]). Thus,
562 results support Hypothesis 5 and indicate that believing in willpower as relying on a
563 nonlimited resource buffers the adverse effect of coping with high levels of emotional
564 dissonance, thereby disrupting the indirect effect on ego-depletion at home via ego-
565 depletion at work.²

² Following recommendations by Spector and Brannick (2011), we re-ran our analyses without the inclusion of biographical characteristics (age and gender) and self-control capacity as control variables. Excluding these control variables did not change the pattern of results. Thus, the possibility that the findings might be attributed to any of the control variables can be ruled out.

566 **Discussion**

567 Due to the prevalence of emotional dissonance in many occupational fields, the present
568 diary study examined consequences of coping with emotional dissonance and tested
569 whether the spillover of emotional dissonance on ego-depletion at home operates
570 through ego-depletion at work. In line with a growing body of empirical evidence
571 suggesting that implicit theories about willpower have the potential to moderate adverse
572 effects of exerting volitional self-control, we further analysed whether believing in a
573 nonlimited resource theory buffers these day-specific (direct and indirect) relations.
574 Thus, the aim of this study was threefold. First, we intended to broaden our
575 understanding on the prolonged effects of emotional dissonance by examining how
576 consequences from coping with emotional dissonance at work affect employees'
577 experiences of ego-depletion throughout the day (that is, at work and in the evening at
578 home). Second, we aimed at advancing knowledge on emotional dissonance at the
579 workplace and implicit theories about willpower by adopting a daily diary design to
580 study within-person differences in an occupational context. Third, we set out to
581 investigate whether endorsing a nonlimited resource theory buffers against the adverse
582 effects of emotional dissonance.

583 Results supported most of the hypothesized relationships. In particular, in terms
584 of the examined mediation effect, our findings show a direct effect of emotional
585 dissonance on ego-depletion at work and further indicate that the positive relation
586 between emotional dissonance and ego-depletion at home is *fully* mediated by ego-
587 depletion at work. In terms of the proposed moderating mechanisms, our results indicate
588 that the intraindividual relationship between emotional dissonance and ego-depletion at
589 work holds only for those employees, who believe that willpower relies on a limited
590 resource. Thus, believing that willpower relies on a nonlimited resource attenuates the

591 day-specific adverse relation between emotional dissonance and ego-depletion at work.
592 However, implicit theories about willpower do not seem to affect the intraindividual
593 spillover of ego-depletion from work to home. Nevertheless, in line with the proposed
594 moderated mediation model, the current study suggests that a nonlimited resource
595 theory prevents that daily emotional dissonance manifests in states of ego-depletion at
596 work and therefore disrupts the adverse indirect effect of emotional dissonance on ego-
597 depletion at home via ego-depletion at work. Thus, our findings lend credence to the
598 notion that believing in a nonlimited resource theory facilitates coping with daily
599 emotional dissonance.

600 *Theoretical implications*

601 The present study may offer several contributions to the literature on emotional
602 dissonance and its spillover to the home-domain and may extend our knowledge on the
603 interplay between exerting volitional self-control and endorsing a nonlimited resource
604 theory of willpower in several ways. First, we empirically replicate the adverse effect of
605 emotional dissonance and provide additional support for the notion that coping with
606 emotional dissonance involves exerting volitional self-control. Just like research on
607 emotional dissonance has repeatedly found, portraying emotions inconsistent with one's
608 genuinely felt emotions depletes the regulatory resource (Grandey, 2003; Zapf & Holz,
609 2006; Diestel & Schmidt, 2010). Furthermore, in line with recent diary studies on
610 emotional dissonance (e.g., Diestel et al., 2015) our results demonstrate that on days
611 with higher levels of emotional dissonance (compared to an employee's average level of
612 emotional dissonance), employees report higher levels of ego-depletion. Results of the
613 multilevel mediation analysis further indicate that the day-specific effect of emotional
614 dissonance on ego-depletion at home is fully mediated by ego-depletion at work. This
615 finding ties in with theoretical notions from the strength model of self-control

616 (Baumeister & Vohs, 2016), propositions from the spillover literature (Edwards &
617 Rothbard, 2000), and recent evidence on the spillover of ego-depletion (Germeys & de
618 Gieter, 2018). Furthermore, although the focus of the current paper was to examine
619 within-person effects, findings of the multilevel mediation analysis further show that the
620 pattern of results is similar at the within- and the between-person level. Accordingly,
621 this result suggests that employees experiencing greater levels of emotional dissonance
622 than others report higher values for ego-depletion at work, which spill over and affect
623 ego-depletion at home (again, a full mediation via ego-depletion at work). Taken
624 together, the present findings contribute to a better understanding of how emotional
625 dissonance affects employees' states at home and emphasize the importance of
626 identifying boundary conditions that directly buffer the adverse effect of coping with
627 emotional dissonance at work, so that experiences of ego-depletion are diminished
628 directly at work and do not spill over to the home-domain.

629 Second, while previous studies on implicit theories about willpower have mainly
630 relied on laboratory research and focused on between-person effects, we conducted a
631 diary study in an applied occupational setting to examine the external validity of the
632 buffering effect of believing in a nonlimited resource theory. The sample we chose
633 (employees from different service-oriented occupations) is particularly relevant,
634 because for these employees, continuously coping with emotional dissonance
635 constitutes a core characteristic of their work-role. In this occupational setting, our
636 results provide support for the buffering effect of believing in a nonlimited resource
637 theory on the direct consequences of coping with emotional dissonance. In particular,
638 we demonstrate that on days when employees experience higher levels of emotional
639 dissonance than usual, only those believing in willpower as a limited resource report an
640 increase of ego-depletion at work. While this research ties in with previous studies on

641 implicit theories about willpower (Job et al., 2010; Job et al., 2013; Bernecker & Job,
642 2015; Bernecker et al., 2015; Job, Walton et al., 2015), it further extends existing
643 knowledge by transferring these insights to an occupational setting and by validating
644 them on a within-person level. Further supplementing recent research, the current study
645 demonstrates that holding a nonlimited resource theory eliminates the indirect effect of
646 emotional dissonance on ego-depletion at home (as indicated by the insignificant
647 indirect effect for people holding a nonlimited resource theory). Thus, only for people
648 holding a limited resource theory, the adverse consequences of coping with emotional
649 dissonance at work spill over to the home-domain and affect employees' levels of ego-
650 depletion in the evening. Taken together, the current study demonstrates that believing
651 in a nonlimited resource theory does not only provide benefits in laboratory settings or
652 in student samples, but might as well have practical implications for employees facing
653 high levels of emotional dissonance on a daily basis.

654 Finally, results of the current study might open up a new discussion on implicit
655 theories about willpower by identifying a potential limit of its moderating effect. While
656 previous research has exclusively analysed the moderating role of implicit theories
657 about willpower on immediate decrements in self-control resources, we also examined
658 whether holding a nonlimited resource theory buffers the spillover of ego-depletion
659 from the work- to the home-domain. By integrating empirical findings from research on
660 recovery after work (e.g., Sonnentag & Natter, 2004; van Hooff et al., 2011; Oerlemans
661 et al., 2014), we argued that people endorsing a limited resource theory turn towards
662 inactivity once they feel that their resource is depleted to some degree, thereby adopting
663 a dysfunctional recovery strategy that prolongs the state of feeling depleted.
664 Simultaneously, we proposed that people holding a nonlimited resource theory adopt a
665 more functional recovery strategy by conducting active leisure activities that facilitate

666 recovery. However, our findings did not support such a moderating effect, indicating
667 that believing in a nonlimited resource theory might not facilitate (or that believing in a
668 limited resource theory might not impede) the replenishment of a depleted regulatory
669 resource. This result may extend our knowledge on implicit theories about willpower by
670 suggesting that although endorsing a nonlimited resource theory might encourage
671 individuals to sustain prolonged exertion of volitional self-control; this implicit theory
672 does not seem to be capable of attenuating depletion effects once they have come to
673 pass.

674 *Limitations and Suggestions for Future Research*

675 Despite several contributions, our study is also subject to some limitations, which need
676 to be discussed. First, although collecting data at two measurement points per day over
677 10 consecutive workdays is an advantage of the current study, employees rated
678 emotional dissonance and ego-depletion at work at the same time point. In order to
679 examine the proposed sequence of our model, we chose different time periods as
680 reference points (emotional dissonance referred to the last hours and ego-depletion to
681 momentary experiences). Nevertheless, in accordance with Roe (2008), larger numbers
682 of time points, shorter intervals, and more specific methods of analysis are needed to
683 study temporal aspects of behaviour adequately. Therefore, future research should
684 assess ego-depletion effects more fine-grained by implementing more measurement
685 points per day.

686 Second, it would be important for further studies to consider more objective
687 measures of ego-depletion. The fact that we set out to investigate depletion effects of
688 the regulatory resource, but only assessed *perceived* ego-depletion is a shortcoming of
689 the current study. Future research could benefit from integrating more objective or
690 behavioural measures of ego-depletion in diary studies, such as smartphone applications

691 that include short self-control tasks, so that intraindividual differences in self-control
692 performance can be analysed more adequately.

693 Third, in our theoretical background we argued that people who hold a limited
694 resource theory monitor first signs of depletion more intensively and might start
695 conserving remaining resources sooner. Future research should consider these possible
696 mechanisms and examine potential mediators that shed light on the underlying
697 psychological processes through which implicit theories about willpower moderate
698 adverse consequences of volitional self-control. Furthermore, it might be argued that
699 people who start conserving resources earlier (due to a limited resource theory) might
700 benefit from reduced exhaustion in the long run. However, until now, it remains unclear
701 “how far effects of theories about willpower reach when periods of self-control exertion
702 are extended” (Job, Bernecker et al., 2015, p. 704). Thus, analysing long-term patterns
703 of ego-depletion by looking at the moderating mechanism of implicit theories about
704 willpower on cumulative effects of ego-depletion across several working days could
705 provide a deeper understanding of these constructs and their interrelationships.

706 Fourth, we conceptualised implicit theories about willpower as a stable trait-like
707 belief that does not change over time and that is domain-independent. In contrast to this
708 approach, some studies managed to experimentally manipulate implicit theories about
709 willpower by asking participants to complete biased questionnaires that fostered
710 agreement with either a nonlimited or a limited resource theory (e.g., Job et al., 2010,
711 Study 2). In light of these inconsistent conceptualisations, future research should shed
712 light onto the time-dependent variability of this construct. Furthermore, recent
713 developments in this field of research suggest that implicit theories about willpower
714 might be domain-specific, meaning that individuals might hold different implicit
715 theories about whether engaging in strenuous mental activities, resisting temptation, or

716 controlling emotions depletes a limited regulatory resource (Bernecker & Job, 2017).
717 Thus, future research needs to deepen our knowledge on the interplay between
718 emotional dissonance and implicit theories about willpower by considering emotion-
719 specific willpower theories (that is, the belief whether controlling emotions depletes a
720 limited resource).

721 Finally, the underlying framework for our reasoning and our hypotheses is
722 derived from the strength model of self-control (Muraven & Baumeister, 2000).
723 However, within the last years, inconsistent results from several meta-analyses (cf.
724 Hagger, Wood, Stiff, & Chatzisarantis, 2010; Carter, Kofler, Forster, & McCullough,
725 2015; Dang, 2017) have challenged the conceptualisation of self-control as relying on a
726 finite energy resource. Therefore, future research needs to refine our understanding of
727 self-control processes and has to advance and update the strength model of self-control
728 (Baumeister & Vohs, 2016). While we believe that the current study contributes to a
729 better understanding on how implicit theories about willpower affect self-control
730 processes, incorporating empirical findings on implicit theories about willpower and
731 resource allocation into a refined strength model of self-control remains an important
732 challenge for future research.

733 ***Practical implications***

734 Because of the increasing significance of the service sector, coping with emotional
735 dissonance has become a major stressor at work (e.g., Cheung & Tang, 2007; Diestel &
736 Schmidt, 2010; Diestel et al., 2015). The current findings underline the hazard of coping
737 with emotional dissonance at work and indicate that on days with high levels of
738 emotional dissonance, employees feel depleted during the workday and also in the
739 evening at home. Because emotional dissonance has been shown to affect ego-depletion
740 at home only indirectly via ego-depletion at work, implementing *strategies at the*

741 *workplace* that counteract experiences of ego-depletion directly at work becomes most
742 important. A first strategy could be to rethink the role of emotional display rules and to
743 consider supporting a climate of authenticity in which customers appreciate the
744 expression of true emotions (Grandey, Rupp, & Brice, 2015). Another promising
745 strategy might be to strengthen protective factors that have the potential to reduce the
746 adverse consequences of experiencing emotional dissonance at work, such as emotional
747 support (de Jonge, Le Blanc, Peeters, & Noordam, 2008) and affective commitment
748 (Rivkin, Diestel, & Schmidt, 2015; Rivkin, Diestel, & Schmidt, 2018). Moreover,
749 training programmes, which teach employees how to authentically feel emotions that
750 need to be displayed instead of faking desired emotions, have been shown to be
751 effective in reducing adverse consequences of emotional dissonance (e.g., Hülshager,
752 Lang, Schewe, & Zijstra, 2015).

753 Another important implication from the present study is that implicit theories
754 about willpower have an immediate beneficial effect for employees who experience
755 high levels of emotional dissonance. Thus, the current findings tie in with research on
756 how implicit theories about own possibilities and resources fuel behaviour and growth
757 (e.g., Dweck, 1986; Dweck & Leggett, 1988; Dweck, 1996). What research on implicit
758 theories in general and on implicit theories about willpower in particular suggests is that
759 promoting a climate in which cherished qualities (e.g., intelligence or willpower) are not
760 carved in stone, but can be cultivated through effort, supports employees to develop and
761 to grow (Dweck, 2006). Thus, managers and leaders should refrain from emphasizing
762 limits of willpower, as this might unintentionally cultivate beliefs in a limited resource
763 theory, which cause employees to habitually energize below their optimum. Instead,
764 fostering an organisational climate that values employees' potentials and focuses on

765 employees' abilities to improve self-control performance can be considered a promising
766 strategy to support them when coping with emotional dissonance.

767 **Conclusion**

768 Can faith move mountains? In the current study, we set out to investigate whether
769 believing in a nonlimited resource theory prevents employees from adverse
770 consequences of emotional dissonance. Our results indicate that when employees are
771 required to cope with emotional dissonance at work, they benefit from believing that
772 exerting volitional self-control is energizing rather than depleting. Although the current
773 study did not indicate that believing in a nonlimited resource theory may help
774 replenishing a depleted resource, the findings underline that endorsing a nonlimited
775 resource theory supports us to overcome first signs of depletion und to sustain self-
776 control when others already feel depleted and turn towards inactivity.

777

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Tables

Table 1. Means, Standard Deviations, Internal Consistencies (*Cronbach's Alpha*) and Intercorrelations of Study Variables

Variable	1	2	3	4	5	6	7
1. Ego-depletion <i>at work</i>	(0.91-0.95)	0.60	0.40				
2. Ego-depletion <i>at home</i>	0.79	(0.91-0.94)	0.24				
3. Emotional dissonance	0.54	0.34	(0.94-0.98)				
4. Theories about willpower ^a	0.20	0.19	0.06	(0.69)			
5. Self-control capacity	-0.43	-0.34	-0.22	-0.03	(0.80)		
6. Age	-0.43	-0.40	-0.23	0.04	0.34	-	
7. Gender ^b	-0.14	-0.27	0.12	-0.32	0.20	0.04	-
<i>M</i>	1.82	1.98	2.24	4.27	3.13	39.72	1.41
<i>SD</i>	0.61	0.60	0.74	0.80	0.50	14.18	0.50

Note: Cronbach's alpha for day-level variables are indicated as range of alpha values across all measurement days. Correlations below the diagonal are person-level correlations ($N_{between} = 71$). Correlations above the diagonal are day-level correlations ($N_{within} = 665-677$).

^a Theories about willpower (high values indicate agreement with a limited resource theory).

^b Gender (1 = female, 2 = male).

Numbers in bold $p < .05$.

Table 2. Results of the Mediation Analysis

<i>Between-person direct effects</i>	<i>Ego-depletion at work</i>		<i>Ego-depletion at home</i>				
	Estimate (<i>SE</i>)	<i>p</i>	Estimate (<i>SE</i>)	<i>p</i>	Estimate (<i>SE</i>)	<i>p</i>	
Gender	-.20 (.10)	.049	-.36 (.12)	.002	-.19 (.08)	.017	
Age	-.01 (.00)	.005	-.02 (.01)	.006	-.00 (.00)	.304	
Self-control capacity	-.22 (.10)	.022	-.09 (.13)	.463	.09 (.10)	.376	
Emotional dissonance	.41 (.09)	.000	.26 (.09)	.003	-.08 (.10)	.426	
Ego-depletion at work					.82 (.15)	.000	
<i>R</i> ²	.538			.740			
<i>Between-person indirect effects</i>					Estimate (<i>SE</i>)	LLCI	ULCI
Emotional dissonance → Ego-depletion at work → Ego-depletion at home					.34 (.09)	.16	.55
<i>Within-person direct effects</i>	<i>Ego-depletion at work</i>		<i>Ego-depletion at home</i>				
	Estimate (<i>SE</i>)	<i>p</i>	Estimate (<i>SE</i>)	<i>p</i>	Estimate (<i>SE</i>)	<i>p</i>	
Emotional dissonance	.15 (.03)	.000	.08 (.03)	.019	.02 (.03)	.520	
Ego-depletion at work					.39 (.07)	.000	
<i>R</i> ²	.046			.125			
<i>Within-person indirect effects</i>					Estimate (<i>SE</i>)	LLCI	ULCI
Emotional dissonance → Ego-depletion at work → Ego-depletion at home					.06 (.01)	.03	.08

Note: 1-1-1 mediation model with random intercepts and fixed slopes;

SE=standard error; *LLCI*=lower level confidence interval (95%), *ULCI*= upper level confidence interval (95%); $N_{between} = 71$; $N_{within} = 665$.

Table 3. Results of the Moderated Mediation Analysis

<i>Within-person direct effects</i>		Estimate (<i>SE</i>)	<i>p</i>	
Path a _w : emotional dissonance → ego-depletion at work		.13 (.03)	.000	
Path b _w : ego-depletion at work → ego-depletion at home		.36 (.06)	.000	
Path c _w : emotional dissonance → ego-depletion at home		.03 (.03)	.353	
Moderation: theories about willpower (<i>TW</i>) ^a → path a _w		.07 (.02)	.003	
Moderation: theories about willpower (<i>TW</i>) → path b _w		.03 (.04)	.553	
<i>Within-person conditional indirect effects</i>		Estimate (<i>SE</i>)	LLCI	ULCI
Emotional dissonance → Ego-depletion at work → Ego-depletion at home				
➤ Nonlimited resource theory (<i>low TW</i>)		.02 (.02)	-.01	.05
➤ Indecisive resource theory (<i>mean TW</i>)		.05 (.01)	.02	.08
➤ Limited resource theory (<i>high TW</i>)		.08 (.02)	.04	.12

Note: moderated mediation model with random intercepts and random slopes;
SE=standard error; *LLCI*=lower level confidence interval (95%), *ULCI*= upper level confidence interval (95%); $N_{within} = 665$;
 R^2 ego-depletion at work = .085, R^2 ego-depletion at home = .182;
^a *TW* = Theories about willpower (high values indicate agreement with a limited resource theory);