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 (Hülsheger & 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 (χ^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 Hülsheger 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 & Tofighi,

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 (Δlog-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., Hülsheger,

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.

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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 *at work*	(0.91-0.95)	**0.60**	**0.40**				
2. Ego-depletion *at home*	**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	-
M	1.82	1.98	2.24	4.27	3.13	39.72	1.41
SD	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

Between-person direct effects	Ego-depletion _at work_		Ego-depletion _at home_			
	Estimate (_SE_)	_p_	Estimate (_SE_)	_p_	Estimate (_SE_)	_p_
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
R^2	.538				.740	

Between-person indirect effects			Estimate (_SE_)	LLCI	ULCI
Emotional dissonance → Ego-depletion at work → Ego-depletion at home			.34 (.09)	.16	.55

Within-person direct effects	Ego-depletion _at work_		Ego-depletion _at home_			
	Estimate (_SE_)	_p_	Estimate (_SE_)	_p_	Estimate (_SE_)	_p_
Emotional dissonance	.15 (.03)	.000	.08 (.03)	.019	.02 (.03)	.520
Ego-depletion at work					.39 (.07)	.000
R^2	.046				.125	

Within-person indirect effects			Estimate (_SE_)	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

Within-person direct effects	Estimate (*SE*)	*p*	
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 (TW)[a] → path a_w	.07 (.02)	.003	
Moderation: theories about willpower (TW) → path b_w	.03 (.04)	.553	
Within-person conditional indirect effects	Estimate (*SE*)	LLCI	ULCI
Emotional dissonance → Ego-depletion at work → Ego-depletion at home			
➤ Nonlimited resource theory *(low TW)*	.02 (.02)	-.01	.05
➤ Indecisive resource theory *(mean TW)*	.05 (.01)	.02	.08
➤ Limited resource theory *(high TW)*	.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);

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