Intrinsic motivation for work activities is associated with empathy: Investigating the indirect relationship between intrinsic motivation for work activities and social support through empathy and prosocial behavior

Sunyoung Oh [a,*], Sang-Choong Roh [b]

[a] *Department of Vocational Studies, Kyonggi University, Suwon, South Korea*
[b] *Department of Psychology, Sungkyunkwan University, Seoul, South Korea*

A B S T R A C T

We proposed a model wherein high intrinsic motivation for work activities fosters high empathy and empathy promotes prosocial behavior, which contributes to greater social support. The results showed that employees with high intrinsic motivation for work activities had greater empathy, and intrinsic motivation was significantly related to social support through empathy and in turn prosocial behavior. This study elucidates the factors that underlie individuals' empathy and extends our understanding of the beneficial function of intrinsic motivation beyond the achievement domain to caring for others and enhancing social support in the social domain.

1. Introduction

Empathy—the ability to understand others' experiences vicariously—is one of most critical components of human adaptive social functioning (Cameron et al., 2019; Davis, 2017). Previous research has shown that empathic individuals tend to have better conflict management skills and cooperate with others more often while being more satisfied with their relationships (Davis, 2017). Furthermore, empathetic individuals are more likely to engage in prosocial behavior to benefit others (Hafenbrack et al., 2020) and protect vulnerable others from harm, and less likely to engage in aggressive actions (Davis, 2017). However, a meta-analysis by Konrath et al. (2011) reports that young adults' dispositional empathy has declined over the past 30 years. Given the beneficial effects of empathy, an important research question concerns what promotes the capacity of empathy. Therefore, the present study explores whether intrinsic motivation for work serves as an antecedent of empathy. As many adults spend the majority of their daytime at work, and as work experience contributes to personality changes in adulthood (Woods et al., 2020), exploring the antecedents of empathy in terms of work-related variables is critical to advancing our knowledge of what promotes empathy.

Here, we focus on the possibility that intrinsic motivation for work activities may serve as an antecedent of empathy. Intrinsic motivation refers to individuals' tendency to engage in an activity for the enjoyment

of the work itself (Ryan & Deci, 2001). As the most autonomous type of motivation characterized by people's innate desire for learning and growing, intrinsic motivation mobilizes the effort and energy needed for an activity for its own sake, without external rewards or threats (Ryan & Deci, 2001, 2017). Recent research has explored empathy as a motivated phenomenon such that individuals avoid or seek empathetic engagement depending on its perceived costs and benefits (Cameron et al., 2019; Ferguson et al., 2020; Zaki, 2014). Specifically, Cameron et al. (2019) demonstrated that people tend to prefer to avoid empathy-eliciting situations because they perceive empathy as cognitively "effortful", and these cognitive costs can motivate people to avoid empathy. Integrating the emerging work on empathy with past research on conservation of resource (COR) theory (Hobfoll et al., 2018) and the broaden-and-build theory (Fredrickson, 2013), we delineate how high intrinsic motivation for work activities can reduce the empathy avoidance tendency and amplify the empathy approach tendency, and in turn enhances perceived social support through prosocial behavior. Then, we empirically test the indirect effects of intrinsic motivation for work on social support through empathy and in turn prosocial behavior.

We aim to contribute to empathy literature by extending the scope of the antecedents of empathy by demonstrating the role of intrinsic motivation, while past research has focused on variability in other-oriented processes such as valuing another's welfare (Batson et al., 2007) and dark triad personality traits (Jonason et al., 2013). We also

---

hope to extend our knowledge of beneficial functioning of intrinsic motivation beyond self-focused achievements to caring for others and enhancing social support in the interpersonal domain.

1.1. Intrinsic motivation and empathy

Although humans have the innate tendency to care for others in distress, people avoid or approach empathetic engagement depending on the perceived cost and benefits of empathy opportunity (Zaki, 2014). Recently, Cameron et al. (2019) demonstrated that people avoid empathy because they consider empathy to be cognitively costly. In their free choice selection task, participants perceived the choice of empathizing with a child refugee in a picture as more mentally demanding and aversive and less efficacious than the detached choice of objectively focusing on the external features of refugees; this led to empathy avoidance responses. Further, the emotionally demanding nature of empathy may also motivate empathy avoidance tendency (Zaki, 2014). Because sharing pain in others generates emotional distress and makes people feel emotionally exhausted and drained, anticipated empathy fatigue may lead people to distance themselves from empathy opportunities to avoid being emotionally exhausted (Cameron et al., 2016).

This motivated account of empathy is particularly important for understanding empathy avoidance tendencies in the workplace. Many activities at work require deliberate, effortful, and resource-intensive self-control processes to inhibit or modify automatic responses to maintain goal-directed behaviors (Rivkin et al., 2018). This self-control process constantly consumes some regulatory resources, and when they feel depleted, people must choose how to devote their regulatory resources; they tend to prioritize their in-role tasks over helping coworkers (Trougakos et al., 2015). Therefore, as empathy is perceived as hard work (Cameron et al., 2019), they are more likely to avoid empathetic engagement by preserving themselves from the loss of resources that they need to reserve for successful work performance. This expectation is consistent with COR theory. According to COR theory (Hobfoll et al., 2018), resource loss has a disproportionately greater impact on people than resource gain, and they strive to protect their resources against resource loss. Further, when they feel fatigue or a lack of resources, they tend to use defensive tactics to protect what they have left. Thus, it seems likely that individuals at a workplace are less able to respond to empathy opportunities and distance themselves in preventing a potentially resource-depleting experience so that they can invest resources in maintaining high priority task goals.

We suggest that individuals with high intrinsic motivation for work activities have an advantage in maintaining high resource availability for their work activities, which promotes empathy. Trougakos and Hideg (2009) suggest that intrinsic motivation results in higher performance by not only decreasing the use of self-regulatory resources due to harmonious and efficient regulation, but also replenishing people's pool of resources as they experience enjoyment while working. Consistent with this notion, using daily diary surveys, Demerouti et al. (2012) showed that participants with higher intrinsic motivation felt more vigorous at the end of the day. Another diary study by Rivkin et al. (2018) found that highly intrinsic motivation of flow experiences relates to low ego-depletion and low need for recovery and high subjective vitality. ten Brummelhuis et al. (2011) showed that employees with low intrinsic motivation reported resource loss after burnout, showing the loss cycle of burnout whereas burnout did not result in resource loss among employees with high intrinsic motivation. These results support that intrinsic motivation enhances regulatory resource availability by reducing the risk of depletion of regulatory resources and replenishing regulatory resources. We thus argue that high intrinsic motivation for work activities may offset the anticipated empathy fatigue associated with the cognitive cost of empathy. Because individuals with high intrinsic motivation generally have more regulatory resources to deal with their work demands, they are more likely to respond

empathetically to another's need for empathy. By contrast, individuals with lower intrinsic motivation are more vulnerable to resource loss from their work activities and thus more likely to avoid empathy, seeing another in distress as a potential stressor that threatens resource loss.

Further, the positive emotions experienced by individuals with high intrinsic motivation while working may amplify the empathy approach tendency by making them feel close to others. The motivated account of empathy suggests that empathy motives likely evolved to optimize individual survival by limiting cooperative resources to the ingroup coalition, which is adaptive for survival, and individuals therefore explicitly or implicitly experience approach motivation to empathize with ingroup targets while excluding the outgroup (Zaki, 2014). According to the broaden-and-build theory (Fredrickson, 2013), the momentary experience of positive emotion (e.g., interest, joy) broadens the scope of cognitive and social awareness and connectedness. Laboratory experiments confirm that induced positive emotion increases one's tendency to see outgroup members as "us" (Dovidio et al., 1998) and reduces own-race bias in Caucasian participants' recognition of Black and White faces (Johnson & Fredrickson, 2005). Therefore, it seems likely that high intrinsic motivation facilitates the empathy approach tendency, as positive emotion may broaden the ingroup-boundary. Indeed, Nelson (2009) reported that compared to conditions of neutral states or negative emotions, induced positive emotions consistently result in greater empathy for a person with a dissimilar cultural background. Therefore, we hypothesize that individuals' intrinsic motivation for work activities is positively associated with their empathy.

Hypothesis 1. Intrinsic motivation for work activities will be positively related to empathy.

1.2. Empathy, prosocial behavior, and social support

Much evidence shows that empathy is a critical antecedent of prosocial behaviors that benefit others. For example, Davis (1983) found that individual differences in empathy significantly predicted empathic emotion, which were positively associated with helping. Using functional magnetic resonance imaging (fMRI), Rameson et al. (2012) showed that higher self-reported empathetic responses to sad images were associated with greater neural activity in medial prefrontal cortex (MPFC), and that activity in MPFC predicted daily friend helping behavior in a diary survey followed by the fMRI session. Further, organizational research has identified empathy as one of the factors driving prosocial behaviors or citizenship-related behaviors. Employees experiencing high empathy are more likely to engage in prosocial behaviors at work (e.g., Hafenbrack et al., 2020). We therefore expect that empathy would have a positive relationship with prosocial behaviors, and that through the effects of empathy on prosocial behaviors, employees with high intrinsic motivation are more likely to engage in prosocial behaviors in the workplace. Moreover, although empathy is an important mediator here, we suspect that intrinsic motivation may influence prosocial behavior through other mechanisms as well. Thus, we only propose partial mediation.

Hypothesis 2. Empathy will be positively related to prosocial behaviors.

Hypothesis 3. Empathy will partially mediate the relationship between intrinsic motivation and prosocial behaviors.

Previous research suggests that helping promotes social support by fostering reciprocal relationships (Halbesleben & Wheeler, 2015; Kahn, 1990). Bowling et al. (2004) suggest that people are motivated to reciprocate to maintain a balance between the amount of social support they receive and give to avoid feeling indebted or guilty when they reciprocate less than they receive. Thus, people who provide their coworkers with more help tend to have more coworker social support in reciprocity. Furthermore, Halbesleben and Wheeler (2015) demonstrated the reciprocal pattern of helping such that a coworker's helping

behavior enhances a recipient's perceived social support, which leads to helping behavior aimed at that coworker. We thus expect that employees who provide more prosocial behavior will have high social support, and that helping behavior mediates the relationship between empathy and social support. Furthermore, we predict that intrinsic motivation will be positively associated with social support via the pathway of empathy and prosocial behavior. Given that there may be other mediating mechanisms that can account for the effects of intrinsic motivation on social support, we only expect partial mediation here.

Hypothesis 4. Prosocial behavior will have a positive relationship with perceived social support.

Hypothesis 5. Prosocial behavior will partially mediate the relationship between empathy and perceived social support.

Hypothesis 6. Intrinsic motivation for work activities will have a partial indirect relationship with perceived social support through empathy and in turn prosocial behavior.

2. Method

Our sample included 480 employees from various organizations in South Korea. They were recruited from training programs at their institutions and voluntarily participated in this study. Data collection was performed before the programs. Through a survey, we attained data on 511 employees after omitting 21 cases with incomplete or invalid responses. We identified 13 univariate outliers ($> \pm$ 3SD) and 18 multivariate outliers (Cook's distance >1); after removing them, the final dataset consisted of 480 participants (33% female) with an average age of 36.65 years (SD = 0.83). Due to the space limit, we provided detailed information regarding the sample, measures, control variables and data analyses including power analysis in the supplementary materials.[1]

2.1. Measures

Participants responded to all measures on a 7-point Likert scale (1 = disagree very much, 7 = agree very much). Reliability for each scale is displayed in Table 1.

2.1.1. Intrinsic motivation for work activities
We measured intrinsic motivation for work activities using the four-item scale of Guay et al. (2000). An example item is "I think that my work is interesting".

2.1.2. Empathy
Empathy was measured with five items from Roh and Suh (2014). An example item is "I can easily put myself in other people's shoes."

2.1.3. Prosocial behavior
We use eight items from the scale of Podsakoff et al. (1990). An example item is "I help others who have heavy work loads".

2.1.4. Social support
We used four modified items from Acitelli and Antonucci (1994) that assessed social support. An example item is "There are people I confide in about things that are important to me".

3. Results

Table 1 presents the means, standard deviations, reliabilities, and

zero-order correlations among variables. We conducted confirmatory factor analysis (CFA) to test the discriminant validity of intrinsic motivation, empathy, prosocial behavior, social support, and organizational commitment. The results revealed that the five-factor model fit the data well, $\chi^2(284) = 632.44$, CFI = 0.96, TLC = 0.96, RMSEA = 0.05, SRMR = 0.04, and all factor loadings were significant. Further, the five-factor model fit the data significantly better than a single factor model, $\Delta \chi^2(10) = 2878.32$, $p < .01$, demonstrating the discriminant validity among the variables.

To test the hypotheses, we first examined a full mediation model wherein intrinsic motivation predicts empathy, which in turn predicts prosocial behavior and then social support. This model showed an acceptable fit to the data, $\chi^2(312) = 723.21$, $p < .01$, CFI = 0.96, TLC = 0.95, RMSEA = 0.05, SRMR = 0.06. Then, we tested a partial mediation model that includes additional direct paths from intrinsic motivation to prosocial behavior and social support (see Fig. 1), $\chi^2(310) = 681.40$, $p < .01$, CFI = 0.96, TLC = 0.95, RMSEA = 0.05, SRMR = 0.05. The chi-square difference test indicated that the partial mediation model had a better fit than the full mediation model, $\Delta \chi^2(2) = 41,81$, $p < .01$, and the direct paths were significant. Next, we examined whether empathy predicts social support and found that the path between empathy and social support was not significant. Therefore, we accepted the partial mediation model as the final model[2] (see Fig. 1). The link between intrinsic motivation and empathy was significant ($B = 0.35$, $SE = 0.04$, 95% CI [0.28, 0.43]), empathy was positively associated with prosocial behavior ($B = 0.52$, $SE = 0.05$, 95% CI [0.41, 0.63]), and prosocial behavior has a positive relationship with social support ($B = 0.65$, $SE = 0.09$, 95% CI [0.48, 0.84]). These results respectively support Hypotheses 1, 2, and 4. Further, consistent with Hypotheses 3, 5, and 6, bias-corrected bootstrapping procedures showed that the indirect effects from intrinsic motivation to prosocial behavior through empathy were significant ($B = 0.18$, $SE = 0.02$, 95% CI [0.14, 0.23]), empathy was significantly associated with social support through prosocial behavior ($B = 0.34$, $SE = 0.05$, 95% CI [0.24, 0.44]), and intrinsic motivation significantly related to social support through empathy and then prosocial behavior ($B = 0.12$, $SE = 0.02$, 95% CI [0.08, 0.16]).

4. Discussion

This study tested whether intrinsic motivation for work is associated with individuals' empathy and the mediating role of empathy in the relationship of intrinsic motivation with prosocial behavior and social support. We found that employees with high intrinsic motivation reported high empathy, high prosocial behavior, and high social support, and intrinsic motivation was positively related to social support through empathy and prosocial behavior, supporting the sequential mediation in the proposed hypotheses.

These findings contribute to empathy literature. In explaining empathy's context-dependency, emerging work in the motivated account of empathy has shown that situational features that affect individuals' perceived cost and benefits of empathy can reduce or increase their motivation to empathize (Cameron et al., 2019; Ferguson et al., 2020). However, this line of work is limited by its focus on situational features shaping value estimations of the cost or benefit (e.g., monetary incentives) inherent to empathic challenges with strangers. Empathy opportunities in everyday life occur within the network of one's daily activities, not in a vacuum. Research shows that people's motivation for prosocial behaviors is affected by their feelings of energies or affective experience in prior or ongoing activities (Fredrickson, 2013; Trougakos et al., 2015). As empathy strongly relates to prosocial behaviors, motivation for empathetic engagement for targets might also be affected by personal or situational factors that affect one's resource reservoir or

---

[1] The data for this article was collected as part of the second author's dissertation project that generated a previous publication (Oh & Roh, 2019); however, the variables and research questions do not overlap with this previously published article.

[2] We tested several alternative models and found that they showed a worse fit than the final model (see the supplementary materials).

Table 1

Descriptive statistics and intercorrelations among variables.

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Gender	0.67	0.47										
2. Age	36.65	0.83	−0.47**									
3. Education	2.16	0.40	−0.10*	0.15**								
4. Position level	2.69	1.44	−0.43**	0.75	0.16**							
5. Career-length	9.65	7.30	−0.33**	0.84	0.08	0.80**						
6. Intrinsic motivation	4.88	1.01	−0.06	0.11*	0.05	0.13*	0.13*	(0.91)				
7. Empathy	5.20	0.80	0.00	0.11*	0.00	0.10*	0.11*	0.45**	(0.88)			
8. Prosocial behavior	5.06	0.77	−0.01	0.14**	0.00	0.09*	0.15**	0.61**	0.65**	(0.90)		
9. Social support	4.84	0.98	0.12*	−0.15**	−0.03	−0.16**	−0.13**	0.43**	0.40**	0.50**	(0.91)	
10. Organizational commitment	4.84	1.00	−0.03	0.06	−0.02	0.00	0.11*	0.60**	0.31**	0.55**	0.34**	(0.91)

$N = 480$. Omega (ω) is in parentheses.
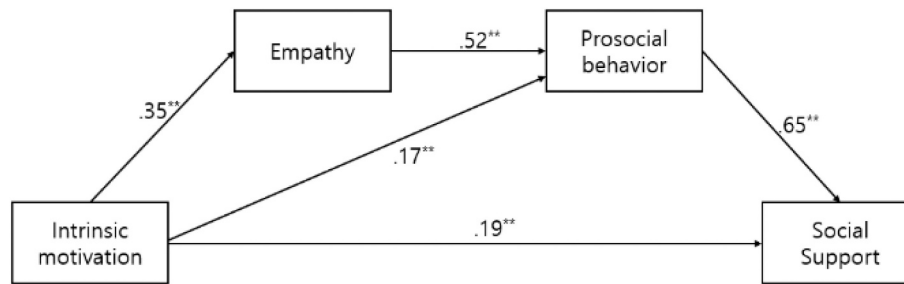* $p < .05$.
** $p < .01$.

Fig. 1. Structural equation modeling results. Unstandardized coefficients are presented here. Paths of the control variables are omitted for clarity (see the supplementary materials). *$p < .05$, **$p < .01$.

experience of emotion, although these factors are not directly related to targets or motives for empathic engagement. This study explored this possibility by focusing on intrinsic motivation for work activities. Our findings showed that, compared to those with low intrinsic motivation, employees with high intrinsic motivation showed greater empathy and in turn greater social support through prosocial behavior, thus indicating that intrinsic motivation for work activities may promote empathy. Therefore, our findings contribute to a broader perspective into the context-dependency of empathy.

This study also contributes to intrinsic motivation literature. Considerable research has demonstrated that individuals with high intrinsic motivation show better performance across all contexts, including school, work, and physical domains (see meta-analysis by Cerasoli et al., 2014). However, to our knowledge, none of the existing research has tested the role of intrinsic motivation in empathy. Thus, our findings elucidate the beneficial functions of intrinsic motivation by providing novel findings showing that intrinsic motivation is closely associated with empathy, prosocial behavior, and social support. Our findings also have implications for the broaden-and-build theory. The broaden-and-build theory suggests the role of positive emotions in building social support, yet little empirical research has investigated how experiences of positive emotions promote social support. Therefore, our findings contribute to the theory by demonstrating the mediating roles of empathy and helping behavior in the link between high intrinsic motivation for work (i.e., experiencing positive emotions like joy and interest while working) and greater social support.

The present findings highlight the importance of considering intrinsic motivation in interventions to improve empathy and cooperation. Developing training programs to increase empathy in the workplace is highly complicated due to work pressures and competition with peers (Hafenbrack et al., 2020). Our findings imply that interventions for increasing intrinsic motivation may not only benefit one's self-interest in their in-role performance, but also strengthen communal interest by promoting empathy and prosociality for coworkers. As satisfaction of need for autonomy increases intrinsic motivation (Ryan &

Deci, 2017), practitioners should consider autonomy-supportive interventions in seeking ways to improve empathy and cooperation; one potential evidence-based example is mindfulness intervention. Consistent with the autonomy-supporting effects of mindfulness, Donald et al.'s (2020) meta-analysis found that mindfulness interventions increased intrinsic motivation. Further, Hafenbrack et al. (2020) demonstrated that a mindfulness intervention enhanced empathy. Thus, practitioners may consider mindfulness interventions to increase intrinsic motivation for work, empathy, and prosociality. Meanwhile, as recovery experience during nonwork time promotes the replenishment of employees' energy and resources (Bennett et al., 2018), it is important to help employees effectively engage in recovery experience, which prevents resource depletion that in turn results in the empathy avoidance tendency. Chawla et al. (2020) highlighted the importance of including mastery-focused activities in effective recovery processes that promote next-day well-being and helping behaviors at work. Given that mastery experience might promote intrinsic motivation for work by satisfying the need for autonomy, future research may extend the present study by examining whether mastery experience during nonwork time facilitates empathy by increasing intrinsic motivation for work.

This study has several limitations. First, with the cross-sectional research method, it is impossible to draw a definite causal conclusion. Future research could conduct experiments and longitudinal studies to test the claimed causality more rigorously. Second, we did not include a measure of resource depletion for the underlying mechanisms we used to explain the effects of intrinsic motivation for work activities on empathy. Future research should investigate variables associated with resource depletion or enrichment (e.g., exhaustion and vigor) that mediate the link between intrinsic motivation and empathy.

Third, we did not include job characteristics and work events. Employees experience different levels of resource depletion and recovery depending on the occurrence of multiple stressors such as workloads, responsibilities, and work events. It is possible that the occurrence of additional work-related demands exacerbates empathy avoidance by depleting employees' regulatory reservoir; however, this process might

be attenuated among employees with highly intrinsic motivation because they have the strength to maintain a stable resource reservoir. Testing this possibility, future research could extend our research to examining the variability in state-empathy within a person as a function of the personal and situational factors that affect the fluctuations of resource depletion.

Finally, although our sample is from 12 organizations in various industries, it only includes office workers, which limits the generalizability of these findings to other jobs. Future research should examine the relationship between intrinsic motivation and empathy among more diverse jobs and industry sectors, including production and service. Our sample is also South Korean, which may limit the generalizability of our findings to other cultures. Recently, Deng et al. (2021) found that Americans tend to escalate reciprocity in a positive exchange but reciprocate in kind in a negative exchange, whereas East Asians tend to escalate reciprocity in a negative exchange but reciprocate in kind in a positive exchange. It is therefore possible that culture affects the way that prosocial behaviors strengthen social support; specifically, prosocial behaviors may strengthen social support through reciprocity more among Americans than East Asians. Future research should thus extend the present work by testing whether different cultures moderate the relationships among variables in our model.

Ethical statement

An Institutional Review Board was not available at the time our study was conducted. However, data collection process was carried out in accordance with recommendations of the American Psychological Association's Ethics Code. Specifically, all participants were assured that their participation was voluntary and that their anonymous responses would be kept strictly confidential. Informed consent was implied by the return of the survey. In the cover-page of the questionnaire, it was clearly stated that "all your responses in this survey will be collected anonymously and be kept confidentially, and only be used for research."

CRediT authorship contribution statement

Sunyoung Oh: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Visualization. **Sang-Choong Roh:** Conceptualization, Methodology, Data curation, Investigation, Project administration, Resources.

Acknowledgements

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi. org/10.1016/j.paid.2021.111487.

References

Acitelli, L. K., & Antonucci, T. C. (1994). Gender differences in the link between marital support and satisfaction in older couples. *Journal of Personality and Social Psychology, 67*(4), 688–698. https://doi.org/10.1037/0022-3514.67.4.688

Batson, C. D., Eklund, J. H., Chermok, V. L., Hoyt, J. L., & Ortiz, B. G. (2007). An additional antecedent of empathic concern: Valuing the welfare of the person in need. *Journal of Personality and Social Psychology, 93*(1), 65–74. https://doi.org/10.1037/0022-3514.93.1.65

Bennett, A. A., Bakker, A. B., & Field, J. G. (2018). Recovery from work-related effort: A meta-analysis. *Journal of Organizational Behavior, 39*(3), 262–275. https://doi.org/10.1002/job.2217

Bowling, N. A., Beehr, T. A., Johnson, A. L., Semmer, N. K., Hendricks, E. A., & Webster, H. A. (2004). Explaining potential antecedents of workplace social support: Reciprocity or attractiveness? *Journal of Occupational Health Psychology, 9*(4), 339–350. https://doi.org/10.1037/1076-8998.9.4.339

ten Brummelhuis, L. L., Ter Hoeven, C. L., Bakker, A. B., & Peper, B. (2011). Breaking through the loss cycle of burnout: The role of motivation. *Journal of Occupational and Organizational Psychology, 84*(2), 268–287. https://doi.org/10.1111/j.2044-8325.2011.02019.x

Cameron, C. D., Harris, L. T., & Payne, B. K. (2016). The emotional cost of humanity: Anticipated exhaustion motivates dehumanization of stigmatized targets. *Social Psychological and Personality Science, 7*(2), 105–112. https://doi.org/10.1177/1948550615604453

Cameron, C. D., Hutcherson, C. A., Ferguson, A. M., Scheffer, J. A., Hadjiandreou, E., & Inzlicht, M. (2019). Empathy is hard work: People choose to avoid empathy because of its cognitive costs. *Journal of Experimental Psychology: General, 148*(6), 962–976. https://doi.org/10.31234/osf.io/jkc4n

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic motivation and extrinsic incentives jointly predict performance: A 40-year meta-analysis. *Psychological Bulletin, 140*(4), 980–1008. https://doi.org/10.1037/a0035661

Chawla, N., MacGowan, R. L., Gabriel, A. S., & Podsakoff, N. P. (2020). Unplugging or staying connected? Examining the nature, antecedents, and consequences of profiles of daily recovery experiences. *Journal of Applied Psychology, 105*(1), 19–39. https://doi.org/10.1037/apl0000423

Davis, M. H. (1983). The effects of dispositional empathy on emotional reactions and helping: A multidimensional approach. *Journal of Personality, 51*(2), 167–184. https://doi.org/10.1037/apl0000443

Davis, M. H. (2017). Empathy, compassion, and social relationships. In E. Seppälä, E. Simon-Thomas, S. L. Brown, M. C. Worline, C. D. Cameron, & J. R. Doty (Eds.), *The oxford handbook of compassion science* (pp. 299–315). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190464684.001.0001.

Demerouti, E., Bakker, A. B., Sonnentag, S., & Fullagar, C. J. (2012). Work-related flow and energy at work and at home: A study on the role of daily recovery. *Journal of Organizational Behavior, 33*(2), 276–295. https://doi.org/10.1002/job.760

Deng, Y., Wang, C. S., Aime, F., Wang, L., Sivanathan, N., & Kim, Y. C. (2021). Culture and patterns of reciprocity: The role of exchange type, regulatory focus, and emotions. *Personality and Social Psychology Bulletin, 47*(1), 20–41. https://doi.org/10.1177/0146167220913694

Donald, J. N., Bradshaw, E. L., Ryan, R. M., Basarkod, G., Ciarrochi, J., Duineveld, J. J. Sahdra, B. K., … (2020). Mindfulness and its association with varied types of motivation: A systematic review and meta-analysis using self-determination theory. *Personality and Social Psychology Bulletin, 46*(7), 1121–1138. https://doi.org/10.1177/0146167219896136

Dovidio, J. F., Isen, A. M., Guerra, P., Gaertner, S. L., & Rust, M. (1998). Positive affect, cognition, and the reduction of intergroup bias. In C. Sedikides (Ed.), *Intergroup cognition and intergroup behavior* (pp. 337–366). Lawrence Erlbaum Associates Publishers.

Ferguson, A. M., Cameron, C. D., & Inzlicht, M. (2020). Motivational effects on empathic choices. *Journal of Experimental Social Psychology, 90*, Article 104010. https://doi.org/10.1016/j.jesp.2020.104010

Fredrickson, B. L. (2013). Positive emotions broaden and build. In , *47. Advances in experimental social psychology* (pp. 1–53). Academic Press. https://doi.org/10.1016/b978-0-12-407236-7.00001-2.

Guay, F., Vallerand, R. J., & Blanchard, C. (2000). On the assessment of situational intrinsic and extrinsic motivation: The Situational Motivation Scale (SIMS). *Motivation and Emotion, 24*, 175–213. https://doi.org/10.1023/A:1005614228250

Hafenbrack, A. C., Cameron, L. D., Spreitzer, G. M., Zhang, C., Noval, L. J., & Shaffakat, S. (2020). Helping people by being in the present: Mindfulness increases prosocial behavior. *Organizational Behavior and Human Decision Processes, 159*, 21–38. https://doi.org/10.1016/j.obhdp.2019.08.005

Halbesleben, J. R., & Wheeler, A. R. (2015). To invest or not? The role of coworker support and trust in daily reciprocal gain spirals of helping behavior. *J.Manag., 41*(6), 1628–1650. https://doi.org/10.1177/0149206312455246

Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior, 5*, 103–128. https://doi.org/10.1146/annurev-orgpsych-032117-104640

Johnson, K. J., & Fredrickson, B. L. (2005). "We all look the same to me" positive emotions eliminate the own-race bias in face recognition. *Psychological Science, 16*(11), 875–881. https://doi.org/10.1111/j.1467-9280.2005.01631.x

Jonason, P. K., Lyons, M., Bethell, E. J., & Ross, R. (2013). Different routes to limited empathy in the sexes: Examining the links between the dark triad and empathy. *Personality and Individual Differences, 54*(5), 572–576. https://doi.org/10.1016/j.paid.2012.11.009

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*, 692–724. https://doi.org/10.5465/256287

Konrath, S. H., O'Brien, E. H., & Hsing, C. (2011). Changes in dispositional empathy in American college students over time: A meta-analysis. *Personality and Social Psychology Review, 15*(2), 180–198. https://doi.org/10.1177/1088868310377395

Nelson, D. W. (2009). Feeling good and open-minded: The impact of positive affect on cross cultural empathic responding. *The Journal of Positive Psychology, 4*(1), 53–63. https://doi.org/10.1080/17439760802357859

Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly, 1*(2), 107–142. https://doi.org/10.1016/1048-9843(90)90009-7

Rameson, L. T., Morelli, S. A., & Lieberman, M. D. (2012). The neural correlates of empathy: Experience, automaticity, and prosocial behavior. *Journal of Cognitive Neuroscience, 24*(1), 235–245. https://doi.org/10.1162/jocn_a_00130

Rivkin, W., Diestel, S., & Schmidt, K. H. (2018). Which daily experiences can foster well-being at work? A diary study on the interplay between flow experiences, affective commitment, and self-control demands. *Journal of Occupational Health Psychology, 23* (1), 99–111. https://doi.org/10.1037/ocp0000039

Roh, S., & Suh, Y. (2014). The five-factor model of workplace spirituality: a conceptualization and scale development. *Korean Journal of Industrial and Organizational Psychology, 27*, 419–447. https://doi.org/10.24230/ksiop.27.2.201405.419

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141–166. https://doi.org/10.1146/annurev.psych.52.1.141

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. New York, NY: Guilford Publishing. https://doi.org/10.7202/1041847ar

Trougakos, J. P., Beal, D. J., Cheng, B. H., Hideg, I., & Zweig, D. (2015). Too drained to help: A resource depletion perspective on daily interpersonal citizenship behaviors. *Journal of Applied Psychology, 100*(1), 227–236. https://doi.org/10.1037/a0038082

Trougakos, J. P., & Hideg, I. (2009). Momentary work recovery: The role of within-day work breaks. In S. Sonnentag, P. L. Perrewé, & D. C. Ganster (Eds.), *Current perspectives on job-stress recovery: Research in occupational stress and well being* (pp. 37–84). Bingley, UK: JAI Press. https://doi.org/10.1108/s1479-3555(2009)0000007005.

Woods, S. A., Edmonds, G. W., Hampson, S. E., & Lievens, F. (2020). How our work influences who we are: Testing a theory of vocational and personality development over fifty years. *Journal of Research in Personality, 85*, Article 103930. https://doi.org/10.1016/j.jrp.2020.103930

Zaki, J. (2014). Empathy: A motivated account. *Psychological Bulletin, 140*(6), 1608–1647. https://doi.org/10.1037/a0037679