Revista de Psicología del Trabajo y de las Organizaciones
ISSN: 1576-5962
ISSN: 2174-0534
Colegio Oficial de la Psicología de Madrid

Energy Crossover from Leader to Followers: A Time-lagged Study of the Effects of Energy Discrepancy and Leader-Member Exchange

Parent-Rocheleau, Xavier; Tremblay, Michel

Energy Crossover from Leader to Followers: A Time-lagged Study of the Effects of Energy Discrepancy and Leader-Member Exchange
Revista de Psicología del Trabajo y de las Organizaciones, vol. 36, no. 2, 2020
Colegio Oficial de la Psicología de Madrid
Available in: http://www.redalyc.org/articulo.oa?id=231364008006
DOI: 10.5093/jwop2020a13

research-article

Energy Crossover from Leader to Followers: A Time-lagged Study of the Effects of Energy Discrepancy and Leader-Member Exchange

La transmisión de energía de líder a seguidores: un estudio time-lagged de los efectos de la discrepancia de energía y del intercambio líder-miembro

Xavier Parent-Rocheleau [a*]
HEC Montreal, Canada
Michel Tremblay [a]
HEC Montreal, Canada

Revista de Psicología del Trabajo y de las Organizaciones, vol. 36, no. 2, 2020

Colegio Oficial de la Psicología de Madrid

Received: 24 April 2019
Accepted: 25 May 2020

DOI: 10.5093/jwop2020a13

ABSTRACT: This study investigates the effects of the difference between leaders' and followers' level of subjective energy on the change in subordinates' energy one year later, and on customer-oriented citizenship behaviors. Building mainly on the crossover model, our time-lagged model also examines the moderating role of leader-member exchange. Results of polynomial regression and response surface analyses performed with a sample of 277 dyads in the retail sector indicate that the effect of the energy gap is asymmetrical, such that followers paired with a more energetic leader gain energy one year later, whereas those matched with less energetic leaders experience energy depletion. As expected, a high-quality relationship buffers the de-energizing effect of leaders with lower energy and augments the gain of energy triggered by more energetic leaders.

Keywords: Energy at work, Crossover model, Dyadic contagion, Leader-member exchange, Energy depletion, Organizational citizenship behavior.

RESUMEN: Este estudio investiga el efecto de la diferencia del nivel de energía subjetiva de los líderes y los seguidores en el cambio de energía de los subordinados un año después y en los comportamientos cívicos orientados a los clientes. Partiendo del modelo de transmisión, nuestro modelo *time-lagged* analiza también el papel moderador del intercambio líder-miembro. Los resultados de la regresión polinómica y de los análisis de superficie de las respuestas llevados a cabo con una muestra de 277 díadas en el sector de comercio minorista indican que el efecto de la brecha energética es asimétrico, de modo que los seguidores emparejados con un líder más energético aumentan su energía un año después, mientras que los emparejados con líderes menos energéticos experimentan un agotamiento de energía. Como se esperaba, una relación de gran calidad amortigua el efecto desenergizante de los líderes con menor energía y aumenta la ganancia de energía activada por los líderes más energéticos.

Palabras clave: Energía en el trabajo, Modelo de transmisión, Contagio diádico, Intercambio líder-miembro, Agotamiento de energía, Comportamiento cívico organizativo.

Introduction

Researchers are becoming increasingly interested in employees' energy in the workplace. The construct of subjective energy at work has been defined as an affective state characterized by a sensation of cognitive liveliness, physical strength, and emotional energy (Shirom, 2004). In the long term, recurrent feelings of energy in the workplace merge to create a sustainable energy resource for the individual (Quinn et al., 2012; Spreitzer et al., 2012). This growing line of research has provided evidence that employees who report high levels of energy at work tend to exhibit higher job performance (Carmeli, 2005; Cole et al., 2012; Cullen-Lester et al., 2016; Menges et al., 2017; Owens et al., 2016), higher involvement in creative tasks (Atwater & Carmeli, 2009; Kahrobaei & Mortazavi, 2016), and higher organizational citizenship or extra-role behaviors (Christian et al., 2015; Little et al., 2011).

Given these beneficial outcomes, scholars have also begun to investigate the factors that contribute to developing or fostering employees' energy at work (Shirom, 2011; Shraga & Shirom, 2009). This body of research demonstrates that social interactions in the workplace have a strong influence in creating, leveraging, and sustaining employees' subjective energy (Cullen-Lester et al., 2016; Fritz et al., 2011; Owens et al., 2016; Quinn & Dutton, 2005; Schippers & Hogenes, 2011; Vogel & Bruch, 2012). The study by Owens et al. (2016) has specifically shown that leaders can energize their followers through positive exchanges and interactions. Furthermore, the related stream of research on the crossover model, which first focused on the transmission of negative or positive experiences between individuals in intimate or close relationships (Westman, 2001, 2015), has also examined how personal resources and work experiences spread from leaders to followers in the workplace (Westman & Chen, 2017). The findings emanating from this stream of research namely provide evidence for the leader-follower crossover of vigor, a component of the work engagement construct (Gutermann et al., 2017; Lu et al., 2018; Ten Brummelhuis et al., 2014; Westman & Chen, 2017; Wirtz et al., 2017). The present study seeks to deepen our understanding of this phenomenon by addressing some gaps in the literature and examining how the discrepancy of subjective energy between leader and follower triggers a change (gain or drop) in follower's subjective energy.

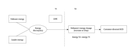

Figure 1
Theoretical Model.

First, whereas an emergent research trend indicates that leaders also contribute to subordinates' energy depletion (Barling & Frone, 2017; von Dreden & Binnewies, 2017), the crossover perspective has solely examined the positive energization of followers. We extend this line of inquiry by proposing that energy crossover may also result in energy loss when leader has lower energy than followers. Second, with few exceptions (e.g., Ten Brummelhuis et al., 2014), research on energy transferal between leader and follower has mainly been cross-sectional. We believe that more longitudinal research is needed to comprehend how followers' feelings of energy change over time as a function of leaders' feelings of energy, and how this change is reflected in more distant behavioral outcomes such as citizenship behaviors. To this end, we rely on the conceptualization of subjective energy as a sustainable resource for the individual resulting from the recurrent feelings of energy (Hobfoll & Shirom, 2001; Quinn et al., 2012). Third, and most importantly, the crossover research takes for granted that the transmission of resources from one person to another does not vary depending on the amount of resources initially held by the receiver. We challenge this view and hypothesize that the differences between leaders' and followers' initial resources may shape important individual outcomes, above and beyond the effect of the resources themselves. Drawing on the crossover literature and on the conceptualization of de-energizing relationships by Gerbasi et al. (2015), we posit that the discrepancy between leaders' and followers' degree of energy will result in subsequent change (upward or downward) in followers' energy. Specifically, we expect that followers who are supervised by a leader with an initial higher degree of energy than themselves will experience a gain of energy in the following months, and that this gain will increase as energy discrepancy grows. On the other hand, we expect that followers whose leader initially has lower energy than themselves will experience energy depletion in the following months, and that this loss of energy will increase as the energy discrepancy grows.

Building on the conservation of resources theory (COR; Hobfoll, 1989; Hobfoll et al., 2018), our conceptual model (see Figure 1) further posits that this change in subjective energy, either upward or downward, will vary depending on the quality of the dyadic relationship between leader and follower. Leader-member exchange (LMX) relationship is characterized by the degree of dyadic respect, loyalty, affect, and contribution from the leader as perceived by subordinates (Liden & Maslyn, 1998). Under conditions of a high quality LMX relationship, leaders provide employees with high empowerment, key information about their job, and valuable performance feedback, creating a resourceful environment for followers (Breevaart & Bakker, 2014; Breevaart et al., 2015). We argue that the gain of resources induced by a high LMX may mitigate the de-energizing effect of the energy gap when high-energy followers are matched with low-energy leaders, and amplify the gain of energy for low-energy followers matched with high-energy leaders.

Finally, our model suggests that leader-follower discrepancy in energy will indirectly influence followers' propensity to adopt customer-directed extra-role behaviors. These positive discretionary behaviors are of high interest for researchers and practitioners in the retail industry because they strongly influence customer satisfaction (Podsakoff et al., 2009). Retail employees require significant personal resources to sustain such a behavioral investment in providing high quality service to customers (George, 1998; Netemeyer et al., 1997), with a sufficient level of energy being viewed as a natural prerequisite for the adoption of extra-role behaviors (Little et al., 2011). Previous studies have also observed the negative effect of energy depletion on employees' extra-role behaviors (Trougakos et al., 2015). We thus argue that the change in energy, as moderated by LMX, will mediate the effect of dyadic energy discrepancy on supervisor-rated customer-oriented extra-role behaviors.

This study yields important practical implications and theoretical contributions to the flourishing research on energy in the workplace, as well as on LMX research. First, the use of polynomial regression analysis allows to capture the effect of energy discrepancy between leader and followers on energy change, beyond the impact of their respective level of energy. Furthermore, by investigating time-lagged change in energy, it allows for a real and accurate depiction of employees' energy change. It also provides a deeper understanding of circumstances in which leaders, instead of their more documented beneficial effect on subordinates' energy, may drain employees' energy resources.

Theoretical Background and Development of Hypotheses

The concept of human energy is investigated in different ways across academic disciplines (Quinn et al., 2012). In the management literature, most of the research focuses on "energetic activation", which refers to subjective activation due to a feeling of vigor, enthusiasm, or vitality, rather than on objective physical energy (i.e., kinetic or potential energetic capacities) (Quinn et al., 2012). We follow recent research relying on the conceptualization of energy at work provided by Shirom (2004), defining energy as an affective state characterizing one's perception of feeling vigorous at work and comprising three dimensions: (1) physical strength, viewed as the feeling of physical vigor; (2) cognitive liveliness, considered as the perceived ability to accomplish mental tasks and the perception of being mentally agile; and (3) emotional energy, viewed as the perceived capacity to engage in interpersonal relationships. Beyond its above definition as an affective state, recurrent high levels of energy at work may also become a more durable resource for the individual over time (Hobfoll & Shirom, 2001; Quinn et al., 2012). Such a transformation of momentary feelings of energy into more durable energetic resources is supported by the principle of expansion of the thought-action repertoire due to the recurrence of positive emotions as described by the broaden-and-build theory (Fredrickson, 2001). The empirical validation of energy as a relatively stable affective state (Shirom, 2004) provides two insights. First, like other researchers (Quinn et al., 2012; Shraga & Shirom, 2009), it allows us to consider energy as a personal resource that can either be enriched or depleted (Hobfoll & Shirom, 2001). Second, like the recent study by Hoppe et al. (2017), this contention allows researchers to investigate long-term changes in employees' energetic resources.

The literature suggests that energy variation over time may occur through a crossover phenomenon. Crossover is conceptualized as a dyadic inter-individual transmission of psychological states or experiences (Westman, 2001; Westman & Chen, 2017). Westman and Vinokur (1998) have proposed three specific mechanisms to explain how crossover occurs. The first one, direct crossover, implies that positive or negative resources or experiences are transmitted between individuals directly.

Second, in indirect crossover, transmission occurs via mediating or moderating mechanisms, such as interpersonal exchange. For example, high subjective energy from the leader may be reflected in positive interpersonal exchanges and enthusiasm, which in turn enhance followers' feelings of energy. The third mechanism occurs when the partners in a dyadic relationship share common positive (e.g., an energizing environment like a positive organizational climate) or negative (e.g., a de-energizing environment like frequent downsizing) experiences, leading to a common effect in both partners.

Whereas some studies have focused on the leader-follower crossover of the vigor component of the work engagement concept (Gutermann et al., 2017; Lu et al., 2018; Ten Brummelhuis et al., 2014; Westman & Chen, 2017; Wirtz et al., 2017), other empirical work has developed the concept of relational energy, showing that leaders' energetic resources can be transferred to followers and that followers gain energy when interacting with an energizing leader (Owens et al., 2016; Wang et al., 2018; Yang et al., 2017). Besides this stream of research on the positive energizing effect of the leader, some research suggests that relationships at work, namely those with supervisors, can also be de-energizing. Gerbasi et al. (2015) found that de-energizing relationships in the workplace may deplete employees' resources and lead to lower job performance. In the same vein, the study by von Dreden and Binnewies (2017) showed that spending recovery time, such as lunch breaks, with the supervisor resulted in reduced vigor for followers. Also, Barling and Frone (2017) found that leader behaviors may be associated with energy depletion reflected in psychological work fatigue.

Despite these empirical advancements, the literature does not provide insights into the dynamics or factors that might explain under which conditions supervisory relationships become energizing or de-energizing for subordinates. We propose that discrepancy between supervisor's and subordinate's subjective energy will predict the direction of subsequent change (drop or increase) in subordinate's subjective energy. Specifically, our contention is that the supervisory relationship will be energizing (i.e., will foster feelings of subjective energy) when supervisor's energy exceeds follower's energy, whereas it will be de-energizing (i.e., restrain feelings of subjective energy) when supervisor's energy is lower than subordinate's energy. One year later, we expect that these recurrent feelings of energy will have shifted to higher (or lower) energetic resources for subordinates. 1

Self-expansion theory (Aron et al., 2013; Aron et al., 2004) suggests that in intimate relationships, individuals are more likely to incorporate partners' resources into their self-concept. We argue that such motivation of self-expansion is likely to occur when a leader manifests a higher level of energy than followers. Frequent interactions between a highly energetic leader and a less energetic follower may trigger a dyadic crossover of energy, enriching the energy of the follower and resulting in energetic resource gains over time (Westman, 2001; Westman & Chen, 2017). Conversely, since important formal and informal power is usually devoted to organizational leaders (Katz & Kahn, 1978), those with lower subjective energy than followers are likely to restrain followers' demonstrations of high energy and vitality. Byrne et al. (2014) have shown that leaders with depleted psychological resources display deleterious leadership behaviors. Such a limiting supervisory context will likely be characterized by frustration and irritation, which are signals of de-energizing relationships (Gerbasi et al., 2015). Based on these arguments, we posit that followers' drop or increase in energy will be a function of the discrepancy between their leader's degree of energy and their own. Moreover, we argue that energy change (gain or loss) one year later will increase as the degree of energy discrepancy grows.

Hypothesis 1: Discrepancy of energy will lead to follower's gain of energy if the leader is more energetic than the follower (*H*1a), and this gain will increase as the discrepancy with the leader grows (*H*1b).

Hypothesis 2: Discrepancy of energy will lead to follower's loss of energy if the leader is less energetic than the follower (*H*2a), and this loss will increase as the discrepancy with the leader grows (*H*2b).

Moderating Effect of LMX

Bakker and Xanthopoulou (2009) found that the crossover of daily vigor occurred only on days when employees interacted more frequently, highlighting the importance of the relationship in the crossover process. We argue that besides the frequency of exchanges with the leader, the quality of exchange also influences the crossover effect and moderates the effect of energy discrepancy during the one-year interval. Leader-member exchange theory (LMX) states that leaders develop unique, high-quality relationships with some followers and lower quality relationships with others (Graen & Uhl-Bien, 1995). A supervisory relationship characterized by high quality LMX provides favorable conditions (e.g., social support, positive feedback, more challenging assignments) for more energetic supervisors to increase their capacity to be energizing for subordinates (Atwater & Carmeli, 2009; Breevaart et al., 2015; Kahrobaei & Mortazavi, 2016). As an additional resource for followers, high-quality relational exchanges with the leader may trigger a resource gain spiral (Hobfoll et al., 2018), and consequently facilitate the energization of followers over time. On the other hand, followers who report a low quality of exchange with the leader consider that their relationship is limited to a work-rewards transaction, seriously limiting the transmission of affective features such as feelings of energy (Breevaart & Bakker, 2014; Gutermann et al., 2017).

Regarding subordinates whose energy exceeds supervisor's energy, our assumption is that the resourceful environment induced by high LMX would buffer the loss of energetic resources in the case of lower energy from the leader. We argue that the restraining effect of a less energetic leader along with the resulting irritation and frustration will be tempered by the trust, respect, and appreciation for the supervisor in the case of high LMX. Conversely, poor relationship quality is likely to deepen the frustration encountered when interacting with a less energetic leader, widen the gap produced by the difference in energy, and accentuate the negative energy crossover from leader to follower one year later. Following these arguments, we suggest the following hypotheses.

Hypothesis 3a: LMX will moderate the gain of energy for followers with lower energy than leader, such that this gain will be more important when LMX is high rather than low.

Hypothesis 3b: LMX will moderate the loss of energy for followers with higher energy than the leader, such that this loss will be more important when LMX is low rather than high.

Indirect Effect on OCB

Our research model posits that the discrepancy in energy between supervisor and subordinate will indirectly influence the adoption of extra-role behaviors oriented toward customers one year later, through change in subordinates' energy. The positive effect of energy at work on motivation and behavioral engagement in work tasks has received some attention (Cole et al., 2012; Mackey et al., 2017; Menges et al., 2017; Owens et al., 2016; Quinn et al., 2012; Spreitzer et al., 2012). Several studies have also shown the impact of employees' energy on positive behaviors going beyond work contract, such as engagement in creative tasks (Adil & Awais, 2016; Atwater & Carmeli, 2009; Kahrobaei & Mortazavi, 2016; Kark & Carmeli, 2009) and proactive behaviors (Cullen-Lester et al., 2016). Moreover, previous studies have also shed light on the influence of energy on the adoption of organizational citizenship behaviors (Christian et al., 2015; Little et al., 2011). Overall, these results support the idea that a gain in energetic resources will be reflected in greater engagement in discretionary positive behaviors at work directed to provide high-quality customer service.

Following the principles of COR theory, a gain in energetic resources allows individuals to invest resources in their environment in order to accumulate new ones (Hobfoll & Shirom, 2001). Higher resource investment is manifested in the adoption of positive discretionary behaviors (Little et al., 2011). On the other hand, COR theory states that, in the case of resource loss, individuals seek to limit their investment of resources and tend to stop engaging in active behaviors that are not mandatory or essential (Hobfoll et al., 2018). Following this logic, energy depletion is likely to lead employees to refrain from OCB adoption (Trougakos et al., 2015). Thus, employees facing loss of energy are likely to reduce their involvement in discretionary behaviors directed toward customers and limit their efforts to prescribed tasks, seeking to preserve their remaining energetic resources.

We also hypothesize that leader-follower energy gap will interact with LMX to predict customer-directed OCB. Although several meta-analyses have demonstrated that LMX acts as an important direct antecedent of OCB (e.g., Dulebohn et al., 2012; Ilies et al., 2007), other pieces of empirical evidence suggest that LMX can also play other roles in explaining the adoption of OCB. For instance, Boon and Biron (2016) found that high quality LMX is a boundary condition (moderator) of overtime consistency in employees' P-E fit perceptions and of the behavioral consequences of these fit perceptions. Also, similar to our reasoning, Greenbaum et al. (2018) found that contagion of leaders' unethical behavior on employees' unethical behavior varies upon the quality of LMX. In other words, LMX has previously been viewed as a moderator of the effect of congruence. In this regard, high-quality LMX has been viewed as a condition providing acute resources (Breevaart & Bakker, 2014; Breevaart et al., 2015) and triggering resource gain spirals, which facilitate the accumulation of additional resources.

We claim that combination of a high LMX relationship and a leader with a superior level of energy will increase the likelihood of customer-oriented OCB adoption by followers due to the stronger energy crossover and the resulting resource gain spiral. Conversely, the combination of low LMX relationship and a leader with a lower level of energy will lead followers to limit their adoption of customer-oriented OCB due to energy depletion and the consequent spiral of resource loss.

Hypothesis 4: LMX moderates the mediated relationship between leader-follower energy dissimilarity and customer-directed OCB through followers' energy change, such that OCB will be higher in the case of high LMX and higher energy from the leader, and lower in the case of low LMX and lower energy from the leader.

Method

Sample and Procedure

The study was conducted in a retail chain comprising numerous stores across Canada. At time 1 (T1), 510 employees and their 37 supervisors received an invitation to take part in the study, along with the link and codes to access the secure and anonymous electronic survey. Employee survey included measures of their perceived energy level and perception of LMX, whereas manager survey only included measures of their perceived energy level. Of the 405 employee responses (79%), 19 were eliminated because of missing data. All the managers completed the survey without missing data. At time 2 (T2, 12 months later), the 386 T1 respondents and their 37 supervisors were asked to complete T2 survey. Employee survey solely measured their degree of energy, whereas we asked supervisors to evaluate customer-oriented OCBs performed by subordinates. Questionnaires were completed by 303 employees (78%), among which 26 had to be rejected because of missing data. All the supervisors completed T2 survey. Results of *t*-tests revealed no significant differences in demographic characteristics (age, status, sex, tenure) between employees who responded only at T1 and those who completed T1 and T2 surveys. Hence, the final sample comprises 277 dyads (277 subordinates and 37 supervisors). Supervisors rated all their subordinates simultaneously, and each supervisor was matched with between 3 and 12 subordinates, with an average of 8.

Employees in the sample were 78% women, their average age was 36.1 years (*SD* = 13.4), and their average dyadic tenure with their actual supervisor was 5.8 years (*SD* = 5.4). Forty-seven percent of them were full-time employees, and 28% held a university degree, while 72% held a college or high school degree. Supervisors were 51% women, their average age was 46.2 years (*SD* = 8.5), and their average organizational tenure was 11.1 years (*SD* =6 .9). All of them (100%) had a full-time position, and 56% held a university degree.

Measures

All measurement tools used a 7-point Likert scale ranging from 1 (*completely disagree*) to 7 (*completely agree*).

T1: energy at work. Employees' and supervisors' perception of their degree of energy was measured with the 14-item Shirom-Melamed, items that reflect the three-dimensional construct of energy at work outlined by Shirom (2004). Sample items are "In the last months, have you generally felt… full of pep [physical strength]? mentally alert [cognitive liveliness]? able to show warmth to others [emotional energy]?" This scale showed good internal consistency for followers (α = .94 [T1]/.93 [T2]) and for leaders (α = .93 [T1]). Since followers in the sample are nested into stores, and leaders have more than one subordinate under their responsibility, we sought to verify to what extent variance of energy occurred between-stores as compared to within-stores. To do so, we first calculated the ICC1 and ICC2 values. Results (ICC1 = .06, ICC2 = .29) indicate that followers' energy between-store variance, and group mean reliability of energy are low. Second, using a random coefficient modeling (RCM) approach, we compared a model allowing random variance of energy to a model without random variance. Results of the model comparison ($\Delta\chi^2$ = 1.33, Δ *df* = 1, p > .05) indicate that allowing for random variance of followers' energy across stores does not improve model fit. Consequently, we analyzed followers' energy at the individual level.

Table 1

Descriptive Statistics and Two-tailed Correlations

	M	*SD*	1	2	3	4	5	6	7	8
1. Status (1 = full time)										
2. Age discrepancy	12.34	9.11	.30**							
3. Sex discrepancy			.01	.04						
4. Dyadic tenure	5.76	5.39	-.29*	-.46**	-.05					
5. Follower energy (T1)	6.09	0.75	-.03	.12	.02	.05				
6. Leader energy (T1)	6.53	0.54	-.03	-.25**	.14*	.01	.05			
7. Energy change (T2)	-0.11	0.76	-.08	.04	-.03	-.01	-.38**	.10		
8. LMX (T1)	5.67	0.81	-.12*	-.05	-.05	-.06	.12	-.14*	.20**	
9. Customer-directed OCB (T2)	5.36	1.23	-.22**	-.05	-.01	.02	.20**	-.06	.06	.35**

Note. N = 277 employees and 37 supervisors; age discrepancy = absolute difference in age between leader and follower; sex discrepancy = 0 is same sex and 1 is different sex.

T1: leader-member exchange (LMX). Followers' perception of LMX was measured at time 1 using the 11-item LMX-MDM scale developed by Liden and Maslyn (1998), and including the four dimensions: affect, contribution, loyalty, and professional respect. A sample item is "I like my supervisor very much as a person." As in previous studies, we combined the four dimensions and used LMX as a unified construct. This scale showed good internal consistency ($\alpha = .94$). Store-level variance verification (ICC1 = .08, ICC2 = .33) indicates that between-store variance and group mean reliability of LMX are low. Similarly, the comparison between a model with random variance of LMX intercept and a model without random variance indicates no fit improvement ($\Delta\chi^2 = 2.10$, $\Delta\, df = 1$, $p > .05$). We consequently analyzed LMX at individual level of analysis.

T2: customer-oriented organizational citizenship behaviors (OCB). In order to reduce same-source bias, we relied on supervisors' assessment of subordinates' OCB. To do so, we used the 3-item customer dimension of the scale provided by Netemeyer and Maxham (2007), which measures customer-oriented foci of extra-role behavior manifested by service employees (e.g., "Does this employee go above and beyond the 'call of duty' when serving customers?"). This scale showed good internal consistency ($\alpha = .94$). Store-level variance verification indicates that between-store variance and group mean reliability of these supervisors' ratings of OCB are low (ICC1 = .12, ICC2 = .27). Similarly, comparison between a model with random variance intercept and a model without random variance indicates no fit improvement ($\Delta\chi^2 = 2.33$, $\Delta\, df = 1$, $p > .05$). We consequently analyzed OCB at the individual level of analysis.

T2: energy change. The change in followers' energy between T1 and T2 was calculated by subtracting each employee's T1 score from the T2 score on the energy scale. The operation creates a change score, which is either positive (energy gain: 143 cases) or negative (energy loss: 116 cases). 2 Length of temporal gap between T1 and T2 (one year) was determined by previously explained conceptual reasons. Since we sought to capture energy as a resource, such a time lag allows for the process of transformation of feelings of energy into more durable resources, and leader-member exchange to exert its moderating role on this process.

Control variables. Based on the literature regarding the impact of relational demography in leader-follower dyads on employee and relational outcomes (Kacmar et al., 2009; Tsui & O'Reilly, 1989; Tsui et al., 2002), we sought to control for sex discrepancy (coded 0 = same sex, 1 = different sex) and age discrepancy (absolute age difference in years). Also, to account for potential familiarity effect (Green et al., 1996), dyadic tenure (number of years since an employee is supervised by the actual supervisor) was also included in the analyses. Finally, we included status (full-time, part-time, or on-demand employment) to account for the possible change in interaction frequency with the supervisor between part-time and full-time employees.

Analytical Design

We used polynomial regression analyses (PRA) to test our hypotheses and response surface analyses to interpret results (Edwards & Parry, 1993). According to Edwards (1994), PRA is useful to more accurately examine the effect of the degree of discrepancy (or congruence and incongruence) between two predictor variables, as compared to the previously widely used difference score approach (Edwards, 2001). Due to its higher precision and validity than this previous approach, the PRA technique is increasingly used in person-environment fit research and other studies aiming to examine the effect of (in)congruence between two variables and tends to become the actual norm in such research (see Kristof-Brown et al., 2018; Weidmann et al., 2017; Yang et al., 2008). PRA consists in regressing the energy change variable on follower's energy score (b1), leader's energy score (b2), squared follower's energy score (b3), interaction of follower's and leader's energy score (b4), and squared leader's energy score (b5). Derived from these regressions, we calculated the four response surface analysis coefficients and plotted the corresponding three-dimensional graphs. These coefficients are labeled a1 (b1 + b2: linear slope of the congruence effect); a2 (b3 + b4 + b5: quadratic curvature of the congruence effect); a3 (b1- b2: linear slope of the discrepancy effect); and a4 (b3 - b4 + b5: quadratic curvature of the discrepancy effect). 3 Linear slopes inform on the effect of the direction of the congruence or discrepancy (e.g., leader's energy < or > followers'), whereas quadratic curves are useful to examine the effect of the scope of congruence or discrepancy.

To test moderation and mediated moderation hypotheses with PRA scores as a predictor, we multiplied the five regression terms with centered score of subordinates' LMX and examined the incremental variance explained by the model. To further test the indirect effect of discrepancy on OCB through the effect of energy change, we regressed the OCB variable on the five multiplied regression terms, in addition to including the effect of energy change (mediator) in the model. Significance of energy change effect will then indicate whether or not energy discrepancy exerts an indirect influence on OCB.

Results

Zero-order correlations between variables and descriptive statistics are presented in Table 1. We performed a confirmatory factor analysis to test the goodness of fit of our measurement model (Bentler & Bonett, 1980). Results indicate that the three-factor model involving energy, LMX, and OCB exhibits stronger fit with the data, $\chi^2(279) = 638.58$, $p < .01$, CFI = .938, TLI = .928, RMSEA = .071, SRMR = .067, than an alternative model combining energy and LMX, $\chi^2(281) = 1729.03$, $p < .01$, $\Delta\chi^2(2) = 1090.5$, $p < .01$, CFI = .751, TLI = .712, RMSEA = .142, SRMR = .267, and than a single-factor model, $\chi^2(282) = 2352.9$, $p < .01$, $\Delta\chi^2(3) =$

1714.3 p < .01, CFI = .644, TLI = .59, RMSEA = .17, SRMR = .294. These results suggest the three latent constructs measured through our questionnaires are well represented as distinct construct in the data.

Table 2

Polynomial Regression Results

	Energy Change						Customer-oriented OCB					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
Variables	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*	β	*SE*
Controls												
Constant	.12	.15	.16	.16	.04	.15	5.81**	.31	5.86**	.31	5.86**	.29
Dyadic tenure	-.01	.01	-.01	.01	-.01	.01	.00	.02	.01	.02	.01	.02
Gender difference	-.05	.10	-.06	.10	-.05	.09	.27	.18	.19	.18	.19	.18
Leader's gender	-.10	-.09	-.10	-.07	-.07	-.04	.03	.03	.02	.03	.04	.02
Age discrepancy	.00	.00	-.01	.01	-.00	.00	.01	.01	.01	.01	.01	.01
Job status	-.11	.06	-.104	.06	-.04	.06	-.40**	.12	-.37**	.12	-.37**	.11
Predictors												
F	-.38**	.06	-.33**	.07	-.43**	.07	.32**	.12	.19	.13	.24	.15
L	.13	.09	.26	.18	.21	.13	-.37*	.18	-.39	.24	-.41	.25
F^2			-.09	.07	-.09	.07			-.16	.13	-.15	.13
L x F			.22**	.13	.24	.13			.40	.25	.37	.25
L^2			.03	.15	-.10	.14			.13	.27	.15	.27
Interaction												
F x LMX					.03	.05			.34**	.09	.34**	.09
L x LMX					.04	.09			.61**	.17	.61**	.17
F^2 x LMX					.04	.04			.17*	.07	.17*	.07
F x L x LMX					.03	.13			-.37	.24	-.37	.24
L^2 x LMX					.32**	.09			.16	.18	.13	.18
Mediation												
Energy change											.12	.14
F statistic	7.17**		5.93**		5.44**		3.67**		4.62**		4.36**	
R^2	.18		.22		.29		.11		.27		.28	
ΔR^2			.04*		.07**				.16**		.01	

Note. Coefficients are unstandardized; L = leader's energy; F = follower's energy; LMX = leader-member exchange.
* p < .05, ** p < .01.

Table 3

Response Surface Test of the Polynomial Effects

	Energy change				Customer-OCB			
	a1	a2	a3	a4	a1	a2	a3	a4
No LMX effect	-.07	.16	-.59**	-.28	-.07	.08	.60*	-.26
Level of LMX								
Low	-.36	-.32	-.60*	-.65	-.91	-.09	.09	-.41
High	-.24	.33	-.61**	.05	.31	-.15	.86**	-.15

Note. a1 = slope along the congruence line; a2 = curvature along the congruence line; a3 = slope along the discrepancy line; a4 = curvature along the discrepancy line. The effect of energy change on customer-OCB was not included in the models. * p < .05, ** p < .01.

Energy Change

Hypotheses 1(a and b) and 2(a and b) state that a follower will gain energy when paired with a more energetic leader (*H*1a) and lose energy when matched with a leader with lower energy (*H*2a). Results presented in Table 2 indicate a significant increase of variance explained when integrating the polynomial terms in the model (Model 2). As indicated in Table 3, the response surface coefficient for the slope of the discrepancy effect on energy change (a3 = -.59, p < .01) provides support for *H*1a and *H*2a. As depicted in Figure 2, the dissimilarity scenario of a highly energetic follower matched with a less energetic leader (see downward point A in Figure 2) yields a negative energy change, while a follower with low energy matched with a more energetic leader yields positive, but lower energy change (see point B in Figure 2) in comparison to the first scenario. However, the curvature of the figure along the discrepancy line is not significant (a4 = -.28, $p > .05$), indicating that the discrepancy effect is linear. Hypotheses 1b and 2b are thus rejected – the gain and loss in energy do not grow as the energy discrepancy is large.

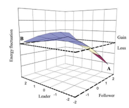

Figure 2
Energy Chance Predicted by Leader-Follower Energy Discrepancy.

Hypothesis 3a posits that the effect of discrepancy on energy gain for followers with lower energy than the leader is stronger when their perception of LMX is high rather than low, whereas hypothesis 3b posits that loss of energy experienced by more energetic followers is more important when LMX is low. Results indicate that addition of interaction terms to the polynomial model (see Table 2, Model 3) significantly increases variance of energy change explained by the model ($\Delta R^2 = .07$, $p < .01$). To allow for further interpretation, we created subgroups from our sample, namely low LMX respondents (- 1 *SD*) and high LMX respondents (+ 1 *SD*), and plotted the PRA effects for both groups. Table 3, which presents polynomial coefficients for both groups, indicates that energy dissimilarity has a significant effect on energy change at both low (a3 = -.60, $p < .01$) and high (a3 = -.61, $p < .01$) levels of LMX. As hypothesized, Figures 3a and 3b reveal that the pattern of influence is different. Followers with a lower level of energy than their leader experience loss of energy when their LMX is low (see point B in Figure 3a; value of change = -1.02), whereas they gain energy when their LMX is high (see point B in Figure 3b; value of change = 1.43). These results suggest that energy change is 71% inferior in case of low LMX. Also, when comparing point A in Figure 3a (value of change = -2.02) to point A in Figure 3b (-1.38), we note that followers who are more energetic than their leader experience a 19% greater energy loss when they perceive low rather than high LMX (0.64 change value discrepancy/3.45 total change observed in the study). Taken together, these results fully support *H*3a and *H*3b.

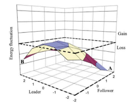

Figure 3a
Energy Chance Predicted by Leader-Follower Energy Discrepancy for Low LMX Followers

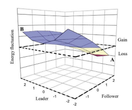

Figure 3b

Energy Chance Predicted by Leader-Follower Energy Discrepancy for High LMX Followers.

Indirect Moderated Effect on OCB

Our research model also postulates that leader-follower energy discrepancy influences followers' OCB through their change in energy as moderated by LMX. When adding energy change as a mediator to the model, including the energy discrepancy effect moderated by LMX, its effect was found to be non-significant (β = .12, p > .05; see Model 6 in Table 2). To provide additional testing of hypothesis 4, we sought to further assess the indirect moderated effect by using the block variable approach (Edwards & Cable, 2009). 4 Results provided by the PROCESS tool (Hayes, 2013) were consistent in indicating non-significant effects for the moderated mediation pattern (estimate = .0004, *SE* = .008, 95% CI [-.0131, .0202]. Hypothesis 4 is thus rejected. To deepen our understanding, we tested the indirect effect of the block variable on OCB through followers' energy level at time 2 (rather than energy change). This effect was found to be significant (estimate = .0524, 95% CI [.0072, .1323]).

Results further suggest that the interaction between energy discrepancy and LMX exerts a significant direct effect on customer-directed OCB (see Model 5 in Table 2). Findings presented in Table 3 regarding this effect under low and high conditions of LMX reveal that energy discrepancy influences customer-oriented OCB only when LMX is high rather than low (a3 = .86, p < .01). As depicted in Figure 4, in the case of high LMX, a follower's OCB is substantially lower when the leader is more energetic than the follower (point B in Figure 4) as compared to when follower is more energetic (point A in Figure 4).

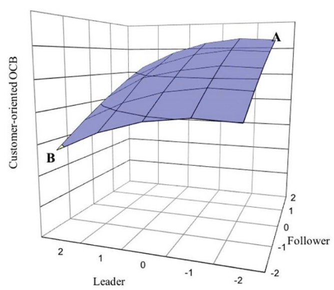

Figure 4

Customer-oriented OCB Predicted by Leader-Follower Energy Discrepancy for High LMX Followers.

Discussion

Drawing on the crossover model, our theoretical model hypothesized that followers would gain energy over time if supervised by more energetic leaders, whereas they would see their energy depleted if supervised by less energetic leaders, and that this gain or loss would vary depending on the quality of LMX as perceived by followers. Our results provide support for these general assumptions, showing that the difference in subjective energy between supervisor and subordinates induces a change in energy and shapes subsequent customer-directed OCB, above and beyond main effects of their baseline feelings of energy.

Theoretical Implications

Energy discrepancy, energy change, and LMX. The present study first extends the literature on incongruence between leader and follower (e.g., Yang et al., 2017) by identifying energy difference as an important mechanism to explain energy crossover. To our knowledge, the current study is the first to demonstrate that resource transmission or crossover results from resource discrepancy between members of a dyadic relationship, beyond the baseline level of their respective resources. More specifically, we found that leaders may be de-energizing when their level of energy is weaker than followers', and energizing when their energy is higher than that of followers. These findings suggest that the crossover process is more complex than previously thought. By overlooking the gap in resources between dyadic partners, researchers have probably over- or under-estimated the crossover effect of energetic resources from leaders to followers. Another worthy contribution concerns the role of time in energy crossover, given that change in energy triggered by energy gap is clearly noticeable one year later. Long-lasting energy gain experienced by followers whose level of energy was initially lower than their leaders' may indicate that high energy from the leader is not an isolated resource and comes with other related resources, referred to by Hobfoll (1989) as resource caravans.

In addition to this resource caravan is the spiral of resource gain produced by a high-LMX condition. Followers with leaders more energetic than themselves and reporting a higher quality dyadic exchange experienced a higher gain in energy. Conversely, followers whose supervisors had lower energy and who reported low LMX experienced more dramatic energy depletion as the result of an energy loss spiral. This finding is in direct line with previous studies depicting high-quality LMX as a condition providing acute resources (Breevaart & Bakker, 2014; Breevaart et al., 2015) and triggering resource gain spirals, which facilitate the accumulation of additional resources.

Energy discrepancy and OCB. Our results do not support the mediation hypothesis of energy change in the relationship between energy discrepancy and OCB. However, additional analyses suggested that the indirect effect occurs through level of energy one year later, rather than change in energy per se. Findings nevertheless indicate that for high LMX individuals energy discrepancy exerts a direct influence on followers' OCB as rated by leaders. Specifically, in the case of high LMX, OCBs displayed by followers whose energy level is lower than their leader's (point B in Figure 4) are drastically lower than OCBs of followers with a higher energy level than their leader (point A in Figure 4).

These unexpected results are interesting in several ways. First, it seems that customer-oriented OCBs displayed by low-LMX individuals are not sensitive to an energy discrepancy with the leader. This might be due to the low exchange propensity of individuals perceiving low LMX. By definition, a low quality leader-member exchange implies weak engagement or investment in extra-role tasks in reciprocation of benefits or rewards received from leaders (Graen & Uhl-Bien, 1995). Second, OCB scores of high LMX followers are substantially higher when they are more energetic than their leader. A plausible explanation for the effect of energy discrepancy on OCBs concerns supervisors' ratings. It is likely that highly energetic supervisors have high expectations toward followers with whom they have a good relationship. If such followers' manifestations of energy are substantially lower than their leader's own level of energy, leader's OCB rating of followers is likely to be negatively biased. On the other hand, a higher manifestation of energy from followers would lead to positively biased OCB ratings. This explanation echoes recent and ongoing research on the issue of differences in leader-follower rating of work characteristics (Lee & Carpenter, 2018).

Practical Implications

The present study sheds light on two factors to take into account in attempts to foster employee energization, namely, the quality of the relationship and followers' level of energy compared to the leader's. First, while a poor relationship inhibits positive energization, a good quality relationship with the leader facilitates positive energization of employees and prevents de-energization. Second, the core of this study concerns the effect of energy discrepancy between leaders and followers. Specifically, that a leader's level of energy induces a change in followers' energy through a crossover phenomenon. Indeed, leaders with lower energy than their followers trigger energy depletion. Hence, our study shows that leaders' energy in the workplace is of high importance because non-energetic leaders may exert a de-energizing effect on more energetic followers. These findings highlight the need for organizations to develop and sustain managers' energy. The growing interest in research on work-related antecedents of energy indicates that recovery moments (Trougakos et al., 2014; von Dreden & Binnewies, 2017), supervisory support (Hoppe et al., 2017), facilitating work-family interface (Moazami-Goodarzi et al., 2015; Russo et al., 2016), and positive relationships (Owens et al., 2016) are among the most influential factors.

Limitations and Future Research

This study has some limitations that should be mentioned. First, we only examined the unidirectional crossover of energy from leader to follower. It would be interesting to test a bi-lateral crossover model, or to integrate leaders' energy as an additional outcome of discrepancy. Second, although not the topic of the study, our research model does not take into account the influence of team energy on employees' energy change. Dyadic relationships between leaders and followers are not isolated and evolve surrounded by other dyadic and team-member relationships (Liden et al., 2016). Since actual research findings tend to emphasize team effect on energy development (Cole et al., 2012; Rego et al., 2017; Vogel & Bruch, 2012), we argue that crossover of team members' energy should be the focus of future research (Bakker & Xanthopoulou, 2009). Finally, an interesting guideline for future research on interpersonal energy development and transfer concerns the leader's "perceived" energy. A recent study by Rego et al. (2017) suggests that followers' perception of leader attributes may exert more influence on follower outcomes than self-rated leader attributes. It is likely that investigating supervisor's energy as perceived by subordinates would provide a deeper understanding of leaders' influence on energy in the workplace.

Conclusion

This study sought to investigate the effects of leader-follower discrepancy in energy level on followers' subsequent change in energy. The findings reveal that followers' energetic resources may be enriched over time by a leader with more energy, but also depleted by a leader with lower energy, depending on the quality of dyadic exchange relationship. The energy gap was also found to influence customer-directed OCB. These findings yield several important contributions to theory and practice.

References

Adil, M. S., & Awais, A. (2016). Effects of leader-member exchange, interpersonal relationship, individual feeling of energy and creative work involvement towards turnover intention: A path analysis using structural equation modeling. *Asian Academy of Management Journal, 21*(2), 99-133. https://doi.org/10.21315/aamj2016.21.2.5

Airila, A., Hakanen, J. J., Schaufeli, W. B., Luukkonen, R., Punakallio, A., & Lusa, S. (2014). Are job and personal resources associated with work ability 10 years later? The mediating role of work engagement. *Work & Stress, 28*(1), 87-105. https://doi.org/10.1080/02678373.2013.872208

Aron, A., Lewandowski, G. W., Mashek, D., & Aron, E. N. (2013). The self-expansion model of motivation and cognition in close relationships. In J. A. Simpson & L. Campbell (Eds.), *The Oxford handbook of* *close relationships* (pp. 90-115). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195398694.013.0005

Aron, A., McLaughlin-Volpe, T., Mashek, D., Lewandowski, G., Wright, S. C., & Aron, E. N. (2004). Including others in the self. *European Review of Social Psychology, 15*(1), 101-132. https://doi.org/10.1080/10463280440000008

Atwater, L., & Carmeli, A. (2009). Leader-member exchange, feelings of energy, and involvement in creative work. *The Leadership Quarterly, 20*(3), 264-275. https://doi.org/10.1016/j.leaqua.2007.07.009

Bakker, A. B., & Xanthopoulou, D. (2009). The crossover of daily work engagement: Test of an actor-partner interdependence model. *Journal of Applied Psychology, 94*(6), 1562-1571. https://doi.org/10.1037/a0017525

Barling, J., & Frone, M. R. (2017). If only my leader would just do something! Passive leadership undermines employee well-being through role stressors and psychological resource depletion. *Stress and Health, 33*(3), 211-222. https://doi.org/10.1002/smi.2697

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*(3), 588-606. https://doi.org/10.1037/0033-2909.88.3.588

Boon, C., & Biron, M. (2016). Temporal issues in person–organization fit, person-job fit and turnover: The role of leader-member exchange. *Human Relations, 69*(12), 2177-2200. https://doi.org/10.1177/0018726716636945

Breevaart, K., & Bakker, A. B. (2014). The influence of constructive and destructive leadership behaviors on follower burnout. In M. P. Leiter, A. B. Bakker, & C. Maslach (Eds.), *Burnout at work* (pp. 110-129). Psychology Press.

Breevaart, K., Bakker, A. B., Demerouti, E., & van den Heuvel, M. (2015). Leader-member exchange, work engagement, and job performance. *Journal of Managerial Psychology, 30*(7), 754-770. https://doi.org/10.1108/JMP-03-2013-0088

Byrne, A., Dionisi, A. M., Barling, J., Akers, A., Robertson, J., Lys, R., Wylie, J., & Dupré, K. (2014). The depleted leader: The influence of leaders' diminished psychological resources on leadership behaviors. *The Leadership Quarterly, 25*(2), 344-357. https://doi.org/10.1016/j.leaqua.2013.09.003

Carmeli, A. (2005). Perceived external prestige, affective commitment, and citizenship behaviors. *Organization Studies, 26*(3), 443-464. https://doi.org/10.1177/0170840605050875

Christian, M. S., Eisenkraft, N., & Kapadia, C. (2015). Dynamic associations among somatic complaints, human energy, and discretionary behaviors: Experiences with pain fluctuations at work. *Administrative Science Quarterly, 60*(1), 66-102. https://doi.org/10.1177/0001839214553655

Cole, M. S., Bruch, H., & Vogel, B. (2012). Energy at work: A measurement validation and linkage to unit effectiveness. *Journal of Organizational Behavior, 33*(4), 445-467. https://doi.org/10.1002/job.759

Cronbach, L. J., & Furby, L. (1970). How we should measure" change": Or should we? *Psychological Bulletin, 74*(1), 68-80. https://doi.org/10.1037/h0029382

Cullen-Lester, K. L., Leroy, H., Gerbasi, A., & Nishii, L. (2016). Energy's role in the extraversion (dis) advantage: How energy ties and task conflict help clarify the relationship between extraversion and proactive performance. *Journal of Organizational Behavior, 37*(7), 1003-1022. https://doi.org/10.1002/job.2087

Dulebohn, J. H., Bommer, W. H., Liden, R. C., Brouer, R. L., & Ferris, G. R. (2012). A meta-analysis of antecedents and consequences of leader-member exchange: Integrating the past with an eye toward the future. *Journal of Management, 38*(6), 1715-1759. https://doi.org/10.1177/0149206311415280

Edwards, J. R. (1994). The study of congruence in organizational behavior research: Critique and a proposed alternative. *Organizational Behavior and Human Decision Processes, 58*(1), 51-100. https://doi.org/10.1006/obhd.1994.1029

Edwards, J. R. (2001). Ten difference score myths. *Organizational Research Methods, 4*(3), 265-287. https://doi.org/10.1177/109442810143005

Edwards, J. R., & Cable, D. M. (2009). The value of value congruence. *Journal of Applied Psychology, 94*(3), 654-677. https://doi.org/10.1037/a0014891

Edwards, J. R., & Parry, M. E. (1993). On the use of polynomial regression equations as an alternative to difference scores in organizational research. *Academy of Management Journal, 36*(6), 1577-1613. https://doi.org/10.2307/256822

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218. https://doi.org/10.1037/0003-066X.56.3.218

Fritz, C., Lam, C. F., & Spreitzer, G. M. (2011). It's the little things that matter: An examination of knowledge workers' energy management. *The Academy of Management Perspectives, 25*(3), 28-39. https://doi.org/10.5465/amp.25.3.zol28

George, J. M. (1998). Salesperson mood at work: Implications for helping customers. *Journal of Personal Selling & Sales Management, 18*(3), 23-30.

Gerbasi, A., Porath, C. L., Parker, A., Spreitzer, G., & Cross, R. (2015). Destructive de-energizing relationships: How thriving buffers their effect on performance. *Journal of Applied Psychology, 100*(5), 1423-1433. https://doi.org/10.1037/apl0000015

Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly, 6*(2), 219-247. https://doi.org/10.1016/1048-9843(95)90036-5

Green, S. G., Anderson, S. E., & Shivers, S. L. (1996). Demographic and organizational influences on leader-member exchange and related work attitudes. *Organizational Behavior and Human Decision Processes, 66*(2), 203-214. https://doi.org/10.1006/obhd.1996.0049

Greenbaum, R. L., Mawritz, M. B., Bonner, J. M., Webster, B. D., & Kim, J. (2018). Supervisor expediency to employee expediency: The moderating role of leader–member exchange and the mediating role of employee unethical tolerance. *Journal of Organizational Behavior, 39*(4), 525-541. https://doi.org/10.1002/job.2258

Gutermann, D., Lehmann-Willenbrock, N., Boer, D., Born, M., & Voelpel, S. C. (2017). How leaders affect followers' work engagement and performance: Integrating leader-member exchange and crossover theory. *British Journal of Management, 28*(2), 299-314. https://doi.org/10.1111/1467-8551.12214

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524. https://doi.org/10.1037/0003-066X.44.3.513

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*, 5103-128. https://doi.org/10.1146/annurev-orgpsych-032117-104640

Hobfoll, S., & Shirom, A. (2001). Conservation of resources theory: Applications to stress and management in the workplace. In R. Golembiewski (Ed.), *Handbook of organizational behavior* (pp. 57-80). Marcel Dekker.

Hoppe, A., Toker, S., Schachler, V., & Ziegler, M. (2017). The effect of change in supervisor support and job control on change in vigor: Differential relationships for immigrant and native employees in Israel. *Journal of Organizational Behavior, 38*(3), 391-414. https://doi.org/10.1002/job.2151

Ilies, R., Nahrgang, J. D., & Morgeson, F. P. (2007). Leader-member exchange and citizenship behaviors: A meta-analysis. *Journal of Applied Psychology, 92*(1), 269-277. https://doi.org/10.1037/0021-9010.92.1.269

Kacmar, K. M., Harris, K. J., Carlson, D. S., & Zivnuska, S. (2009). Surface-level actual similarity vs. deep-level perceived similarity: Predicting leader-member exchange agreement. *Journal of Behavioral and Applied Management, 10*(3), 315-334.

Kahrobaei, S., & Mortazavi, S. (2016). How leader–member exchange can uplift team's energy to increase creative work involvement. *Team Performance Management, 22*(1/2), 75-91. https://doi.org/10.1108/TPM-06-2015-0029

Kark, R., & Carmeli, A. (2009). Alive and creating: The mediating role of vitality and aliveness in the relationship between psychological safety and creative work involvement. *Journal of Organizational Behavior, 30*(6), 785-804. https://doi.org/10.1002/job.571

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

Kristof-Brown, A. L., Li, C. S., & Schneider, B. (2018). Fitting in and doing good: A review of person-environment fit and organizational citizenship behavior research. In P. Podsakoff, S. B. Mackenzie, & N. P. Podsakoff (Eds.), *The Oxford handbook of organizational citizenship behavior* (pp. 353-370). Oxford University Press.

Lee, A., & Carpenter, N. C. (2018). Seeing eye to eye: A meta-analysis of self-other agreement of leadership. *The Leadership Quarterly, 29*(2), 253-275. https://doi.org/10.1016/j.leaqua.2017.06.002

Liden, R. C., Anand, S., & Vidyarthi, P. (2016). Dyadic relationships. *Annual Review of Organizational Psychology and Organizational Behavior, 3*, 139-166. https://doi.org/10.1146/annurev-orgpsych-041015-062452

Liden, R. C., & Maslyn, J. M. (1998). Multidimensionafity of leader-member exchange: An empirical assessment through scale development. *Journal of Management, 24*(1), 43-72. https://doi.org/10.1177/014920639802400105

Little, L. M., Nelson, D. L., Wallace, J. C., & Johnson, P. D. (2011). Integrating attachment style, vigor at work, and extra-role performance. *Journal of Organizational Behavior, 32*(3), 464-484. https://doi.org/10.1002/job.709

Lu, X., Xie, B., & Guo, Y. (2018). The trickle-down of work engagement from leader to follower: The roles of optimism and self-efficacy. *Journal of Business Research, 84*, 186-195. https://doi.org/10.1016/j.jbusres.2017.11.014

Mackey, J. D., Perrewé, P. L., & McAllister, C. P. (2017). Do I fit in? Perceptions of organizational fit as a resource in the workplace stress process. *Group & Organization Management, 42*(4), 455-486. https://doi.org/10.1177/1059601115625155

Menges, J. I., Tussing, D. V., Wihler, A., & Grant, A. M. (2017). When job performance is all relative: How family motivation energizes effort and compensates for intrinsic motivation. *Academy of Management Journal, 60*(2), 695-719. https://doi.org/10.5465/amj.2014.0898

Moazami-Goodarzi, A., Nurmi, J.-E., Mauno, S., & Rantanen, J. (2015). Cross-lagged relations between work-family enrichment, vigor at work, and core self-evaluations: A three-wave study. *Journal of Business and Psychology, 30*(3), 473-482. https://doi.org/10.1007/s10869-014-9376-3

Netemeyer, R. G., Boles, J. S., McKee, D. O., & McMurrian, R. (1997). An investigation into the antecedents of organizational citizenship behaviors in a personal selling context. *The Journal of Marketing, 61*(3), 85-98. https://doi.org/10.1177/002224299706100306

Netemeyer, R. G., & Maxham, J. G. (2007). Employee versus supervisor ratings of performance in the retail customer service sector: Differences in predictive validity for customer outcomes. *Journal of Retailing, 83*(1), 131-145. https://doi.org/10.1016/j.jretai.2006.10.009

Owens, B. P., Baker, W. E., Sumpter, D. M., & Cameron, K. S. (2016). Relational energy at work: Implications for job engagement and job performance. *Journal of Applied Psychology, 101*(1), 35-49. https://doi.org/10.1037/apl0000032

Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual-and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology, 94*(1), 122-141. https://doi.org/10.1037/a0013079

Quinn, R. W., & Dutton, J. E. (2005). Coordination as energy-in-conversation. *Academy of Management Review, 30*(1), 36-57. https://doi.org/10.5465/amr.2005.15281422

Quinn, R. W., Spreitzer, G. M., & Lam, C. F. (2012). Building a sustainable model of human energy in organizations: Exploring the critical role of resources. *The Academy of Management Annals, 6*(1), 337-396. https://doi.org/10.5465/19416520.2012.676762

Rego, A., Yam, K. C., Owens, B. P., Story, J. S., Pina e Cunha, M., Bluhm, D., & Lopes, M. P. (2017). Conveyed leader psycap predicting leader effectiveness through positive energizing. *Journal of Management, Advanced on line publication*. https://doi.org/10.1177/0149206317733510

Rodríguez-Muñoz, A., Moreno-Jiménez, B., & Sanz-Vergel, A. I. (2015). Reciprocal relations between workplace bullying, anxiety, and vigor: A two-wave longitudinal study. *Anxiety, Stress, & Coping, 28*(5), 514-530. https://doi.org/10.1080/10615806.2015.1016003

Russo, M., Shteigman, A., & Carmeli, A. (2016). Workplace and family support and work-life balance: Implications for individual psychological availability and energy at work. *The Journal of Positive Psychology, 11*(2), 173-188. https://doi.org/10.1080/17439760.2015.1025424

Schippers, M. C., & Hogenes, R. (2011). Energy management of people in organizations: A review and research agenda. *Journal of Business and Psychology, 26*(2), 193-203. https://doi.org/10.1007/s10869-011-9217-6

Shirom, A. (2004). Feeling vigorous at work? The construct of vigor and the study of positive affect in organizations In P. L. Perrewe & D. C. Ganster (Eds.), *Emotional and physiological processes and positive intervention strategies* (Vol. 3, pp. 135-164). Elsevier. https://doi.org/10.1016/S1479-3555(03)03004-X

Shirom, A. (2011). Vigor as a positive affect at work: Conceptualizing vigor, its relations with related constructs, and its antecedents and consequences. *Review of General Psychology, 15*(1), 50-64. https://doi.org/10.1037/a0021853

Shraga, O., & Shirom, A. (2009). The construct validity of vigor and its antecedents: A qualitative study. *Human Relations, 62*(2), 271-291. https://doi.org/10.1177/0018726708100360

Spreitzer, G. M., Lam, C. F., & Quinn, R. W. (2012). Human energy in organizations: Implications for POS from six interdisciplinary streams. In K. Cameron & G. M. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 155-167). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199734610.001.0001

Ten Brummelhuis, L. L., Haar, J. M., & Roche, M. (2014). Does family life help to be a better leader? A closer look at crossover processes from leaders to followers. *Personnel Psychology, 67*(4), 917-949. https://doi.org/10.1111/peps.12057

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., Cheng, B. H., & Beal, D. J. (2014). Lunch breaks unpacked: The role of autonomy as a moderator of recovery during lunch. *Academy of Management Journal, 57*(2), 405-421. https://doi.org/10.5465/amj.2011.1072

Tsui, A. S., & O'Reilly, C. A. (1989). Beyond simple demographic effects: The importance of relational demography in superior-subordinate dyads. *Academy of Management Journal, 32*(2), 402-423. https://doi.org/10.2307/256368

Tsui, A. S., Porter, L. W., & Egan, T. D. (2002). When both similarities and dissimilarities matter: Extending the concept of relational demography. *Human Relations, 55*(8), 899-929. https://doi.org/10.1177/0018726702055008176

Vogel, B., & Bruch, H. (2012). Organizational Energy. In K. S. Cameron & G. M. Spreitzer (Eds.), *The Oxford Handbook of Positive Organizational Scholarship* (pp. 691-702). Oxford University Press.

von Dreden, C., & Binnewies, C. (2017). Choose your lunch companion wisely: The relationships between lunch break companionship, psychological detachment, and daily vigour. *European Journal of Work and Organizational Psychology, 26*(3), 356-372. https://doi.org/10.1080/1359432X.2017.1301428

Wang, L., Owens, B. P., Li, J. J., & Shi, L. (2018). Exploring the affective impact, boundary conditions, and antecedents of leader humility. *Journal of Applied Psychology, 103*(9), 1019-1038. https://doi.org/10.1037/apl0000314

Weidmann, R., Schönbrodt, F. D., Ledermann, T., & Grob, A. (2017). Concurrent and longitudinal dyadic polynomial regression analyses of Big Five traits and relationship satisfaction: Does similarity matter? *Journal of Research in Personality*, 706, 15. https://doi.org/10.31234/osf.io/uzbg6

Westman, M. (2001). Stress and strain crossover. *Human Relations, 54*(6), 717-751. https://doi.org/10.1177/0018726701546002

Westman, M. (2015). Old and new trends in crossover research. In T. D. Allen & L. T. Eby (Eds.), *The Oxford handbook of work and family* (pp. 140-150). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199337538.013.11

Westman, M., & Chen, S. (2017). Crossover of Burnout and Engagement from managers to followers. In C. L. Cooper & J. Campbell Quick (Eds.), *The handbook of stress and health: A guide to research and practice*. John Wiley & Sons. https://doi.org/10.1002/9781118993811.ch14

Westman, M., & Vinokur, A. D. (1998). Unraveling the relationship of distress levels within couples: Common stressors, empathic reactions, or crossover via social interaction? *Human Relations, 51*(2), 137-156. https://doi.org/10.1177/001872679805100202

Wirtz, N., Rigotti, T., Otto, K., & Loeb, C. (2017). What about the leader? Crossover of emotional exhaustion and work engagement from followers to leaders. *Journal of Occupational Health Psychology, 22*(1), 86-97. https://doi.org/10.1037/ocp0000024

Yang, F., Liu, J., Wang, Z., & Zhang, Y. (2017). Feeling energized: A multilevel model of spiritual leadership, leader integrity, relational energy, and job performance. *Journal of business ethics, Advance online publication* 1-15. https://doi.org/10.1007/s10551-017-3713-1

Yang, K., Yan, X., Fan, J., & Luo, Z. (2017). Leader-follower congruence in proactive personality and work engagement: A polynomial regression analysis. *Personality and Individual Differences, 105*, 43-46. https://doi.org/10.1016/j.paid.2016.09.033

Yang, L.-Q., Levine, E. L., Smith, M. A., Ispas, D., & Rossi, M. E. (2008). Person-environment fit or person plus environment: A meta-analysis of studies using polynomial regression analysis. *Human Resource Management Review, 18*(4), 311-321. https://doi.org/10.1016/j.hrmr.2008.07.014

Notes

1 The literature does not provide clear guidance regarding the amount of time over which resources as energy are lost or gained (Hobfoll et al., 2018). Very long timeframes (e.g., Airila et al., 2014, 10 years) have a limitation due to the many external factors influencing the fluctuation of energy over time, whereas very short timeframes used by diary studies (Bakker & Xanthopoulou, 2009) do not capture substantial change over time. We believe that a one-year timeframe reduces the possibility that important environmental and personal changes will contaminate the effect of the energy gap between leader and follower, and allows sufficient time to capture a spiral of lost or gained energy. Previous studies examining the shift or change in energy or vigor also use similar time lags: Hoppe et al. (2017), average of 30 months; Moazami-Goodarzi et al. (2015), one year; Rodríguez-Muñoz et al. (2015), six months.

2 We also calculated standardized residuals by regressing T2 scores of energy onto T1 scores, since some scholars recommend the use of such standardized residuals in modeling change (Cronbach & Furby, 1970). However, because we observed no difference between the results yielded by standardized residuals and simple change scores, we report the results obtained with simple change scores.

3 The four coefficients had to be calculated to plot the graphs, although our model is about discrepancy only.

4 The block variable approach consists in combining the five polynomial terms under a single composite and testing its indirect effect as an independent variable with mediation tests (Edwards & Cable, 2009).

Notes

Cite this article as: Parent-Rocheleau, X. & Tremblay, M. (2020). Energy crossover from leader to followers: A time-lagged study of the effects of energy discrepancy and leadermember exchange. *Journal of Work and Organizational Psychology*, 36(2), 135-145. https://doi.org/10.5093/jwop2020a13

Author notes

Correspondence: xavier.parent-rocheleau@hec.ca (X. Parent-Rocheleau).

Conflict of interest declaration

Conflict of Interest
The authors of this article declare no conflict of interest.