

## Organization Science

Publication details, including instructions for authors and subscription information:  
<http://pubsonline.informs.org>

### The Strain of Spanning Structural Holes: How Brokering Leads to Burnout and Abusive Behavior

Jung Won Lee, Eric Quintane, Sun Young Lee, Camila Umaña Ruiz, Martin Kilduff

To cite this article:

Jung Won Lee, Eric Quintane, Sun Young Lee, Camila Umaña Ruiz, Martin Kilduff (2023) The Strain of Spanning Structural Holes: How Brokering Leads to Burnout and Abusive Behavior. Organization Science

Published online in Articles in Advance 03 May 2023

. <https://doi.org/10.1287/orsc.2023.1664>

Full terms and conditions of use: <https://pubsonline.informs.org/Publications/Librarians-Portal/PubsOnLine-Terms-and-Conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact [permissions@informs.org](mailto:permissions@informs.org).

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

Copyright © 2023 The Author(s)

Please scroll down for article—it is on subsequent pages



With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.) and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to transform strategic visions and achieve better outcomes.

For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

# The Strain of Spanning Structural Holes: How Brokering Leads to Burnout and Abusive Behavior

Jung Won Lee,<sup>a,\*</sup> Eric Quintane,<sup>b</sup> Sun Young Lee,<sup>c</sup> Camila Umaña Ruiz,<sup>d</sup> Martin Kilduff<sup>c</sup>

<sup>a</sup> ESSEC Business School, 95021 Cergy-Pontoise, France; <sup>b</sup> ESMT Berlin Schlossplatz 1, 10178 Berlin, Germany; <sup>c</sup> UCL School of Management, London E14 5AA, United Kingdom; <sup>d</sup> Departamento de Administración de Empresas, Pontificia Universidad Javeriana, Edificio Jorge Hoyos S.J., Cra. 7 No. 40B-36 Piso 4to, Bogotá, Colombia

\*Corresponding author

Contact: [jungwon.lee@essec.edu](mailto:jungwon.lee@essec.edu), <https://orcid.org/0000-0001-6531-253X> (JWL); [eric.quintane@esmt.org](mailto:eric.quintane@esmt.org), <https://orcid.org/0000-0002-9204-059X> (EQ); [sunny.lee@ucl.ac.uk](mailto:sunny.lee@ucl.ac.uk), <https://orcid.org/0000-0003-1088-3727> (SYL); [umana.m01@javeriana.edu.co](mailto:umana.m01@javeriana.edu.co), <https://orcid.org/0000-0001-9615-1572> (CUR); [m.kilduff@ucl.ac.uk](mailto:m.kilduff@ucl.ac.uk), <https://orcid.org/0000-0003-4004-8749> (MK)

Received: August 9, 2021

Revised: November 27, 2021; October 29, 2022

Accepted: January 22, 2023

Published Online in Articles in Advance:  
May 3, 2023

<https://doi.org/10.1287/orsc.2023.1664>

Copyright: © 2023 The Author(s)

**Abstract.** Connecting otherwise disconnected individuals and groups—spanning structural holes—can earn social network brokers faster promotions, higher remuneration, and enhanced creativity. Organizations also benefit through improved communication and coordination from these connections between knowledge silos. Neglected in prior research, however, has been theory and evidence concerning the psychological costs to individuals of engaging in brokering activities. We build new theory concerning the extent to which keeping people separated (i.e., *tertius separans* brokering) relative to bringing people together (i.e., *tertius iungens* brokering) results in burnout and in abusive behavior toward coworkers. Engagement in *tertius separans* brokering, relative to *tertius iungens* brokering, we suggest, burdens people with onerous demands while limiting access to resources necessary to recover. Across three studies, we find that *tertius separans* leads to abusive behavior of others, mediated by an increased experience of burnout on the part of the broker. First, we conducted a five-month field study of burnout and abusive behavior, with brokering assessed via email exchanges among 1,536 university employees in South America. Second, we examined time-separated data on self-reported brokering behaviors, burnout, and coworker abuse among 242 employees of U.S. organizations. Third, we experimentally investigated the effects of the two types of brokering behaviors on burnout and abusive behavior for 273 employed adults. The results across three studies showed that *tertius separans* brokering puts the broker at an increased risk of burnout and subsequent abusive behavior toward others in the workplace.

**Open Access Statement:** This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. You are free to download this work and share with others, but cannot change in any way or use commercially without permission, and you must attribute this work as “*Organization Science*. Copyright © 2023 The Author(s). <https://doi.org/10.1287/orsc.2023.1664>, used under a Creative Commons Attribution License: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.”

**Funding:** E. Quintane received funding from Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft.

**Keywords:** structural holes • brokering behaviors • *tertius separans* • *tertius iungens* • social networks

Network brokers,<sup>1</sup> individuals who span across structural holes, that is, gaps in the social structure, play a key role in organizations by bridging individuals and social groups that would otherwise be disconnected (Burt 1992). In organizational settings, brokering across structural holes facilitates the diffusion and coordination of information and resources across time and space (Burt 2005). By transferring otherwise siloed knowledge (Reagans and McEvily 2003), employees who broker across structural holes facilitate positive organizational outcomes (Kellogg 2014). Brokering across structural holes also unlocks career advantages for brokers, including high

performance (e.g., Burt 2005), fast promotions (e.g., Podolny and Baron 1997), high remuneration (e.g., Burt 2007), and high creativity (e.g., Burt 2004).

These advantages that social network brokering achieves for individuals and their employing organizations result from intense and sometimes difficult social interactions across boundaries (e.g., Long Lingo and O’Mahony 2010, Kellogg 2014). The question arises as to whether brokering comes with a psychological cost. Brokers have been portrayed as experiencing “strain, stress, and confusion” (Stovel and Shaw 2012, p. 153) and role conflict (Stovel et al. 2011). They “can expect to

be rip-sawed by conflicting pressures” (Burt 2015, p. 151). Brokering between disconnected alters can be stressful given that people prefer to huddle with others similar to themselves rather than connect with relative strangers (McPherson et al. 2001, Ingram and Morris 2007). Bridging diverse and disconnected others, brokers may be confronted with conflicting norms that may undermine brokers’ identities (e.g., Podolny and Baron 1997) while removing sources of trust and support (Coleman 1990). The strain involved in bridging separated parties has been depicted as psychologically torturous (e.g., Krackhardt 1999) given that brokers may incur distrust (e.g., Xiao and Tsui 2007, Tasselli and Kilduff 2018) and suffer reputational loss (e.g., Podolny and Baron 1997).

Despite these allusions to the strains associated with brokering across structural holes, prior research has neglected to either theorize or empirically examine the potentially negative effects of brokering on brokers and those whose well-being is affected by the activities of brokers (Halevy et al. 2019). We break new ground by developing theory relating activities that brokers engage in when spanning structural holes to their experience of burnout and subsequent abusive behavior toward their coworkers. Burnout is an extreme stress syndrome, recognized by the World Health Organization as an occupational phenomenon that costs U.S. companies up to \$190 billion each year in healthcare (Borysenko 2019). Employees who are exposed to a sustained overly demanding environment are more likely to experience burnout (Bakker et al. 2004) including symptoms of emotional exhaustion and psychological distancing from their jobs (Demerouti et al. 2001). Furthermore, brokers who suffer burnout and the consequent inability to curtail anger are at risk for engaging in abusive behavior toward coworkers (e.g., Lin et al. 2016) that can inflict productivity and social costs on their organizations (Tepper 2007, Foulk et al. 2018).

We distinguish between two types of brokering behaviors: *tertius separans*<sup>2</sup> behaviors that keep separated people apart (Obstfeld et al. 2014) and *tertius iungens* behaviors that bring separated people together (Simmel 1950, Obstfeld 2005, Stovel and Shaw 2012). Drawing on the *job demands-resources* framework (JD-R) (Bakker and Demerouti 2017), we suggest that these two types of brokering behaviors have different consequences for brokers’ burnout and abusive behavior. Specifically, we argue that people engaged in *tertius separans* brokering behavior experience higher informal role demands combined with limited potential to replenish resources. Thus, *tertius separans* brokering exposes people to a higher risk of burnout, that, in turn, increases their risk of engaging in abusive behavior. By contrast, people engaged in *tertius iungens* brokering experience lower informal role demands, that, in turn, lowers their relative risk of experiencing burnout and of behaving abusively toward coworkers.

We make several contributions to network research. First, we answer the call to pay “close attention to micro-level relations and social psychological processes” of brokerage (Stovel and Shaw 2012, p. 139) by introducing the JD-R framework (Bakker and Demerouti 2017) as an overarching approach to understanding how brokering relates to burnout and abusive behavior. Building on the JD-R framework, we highlight the potentially different demands associated with bringing people together and keeping people apart. Second, balanced against research showing performance benefits of *tertius separans* brokering (Soda et al. 2018), we unravel the hidden costs of *tertius separans* brokering relative to *tertius iungens* brokering. *Tertius separans* brokering, we suggest, is more likely than *tertius iungens* brokering to cause burnout as it involves higher job demands as well as a more limited availability of resources. Third, we investigate the neglected negative consequences of brokering on colleagues surrounding brokers (Halevy et al. 2019). Brokers are frequently active at the highest levels of organizations, connecting with a broad range of coworkers (e.g., Kleinbaum and Stuart 2014). Thus, their brokering activities affect colleagues and exemplify appropriate conduct throughout the organization.

## Theory and Hypotheses

### Demands and Resources Associated with Brokering Across Structural Holes

High job demands are predictive of employees’ burnout and exhaustion according to JD-R research (e.g., Demerouti et al. 2001). Job demands are “aspects of the job that require sustained psychical, emotional, or cognitive effort” (Bakker et al. 2014, p. 392). High job demands, such as excessive workload, role conflict, and negative emotions, tend to increase employees’ experience of burnout (Alarcon 2011, Nahrgang et al. 2011, Bakker and Demerouti 2017). By contrast, job resources, such as trust, social support, and positive emotions, help buffer the impact of excessive job demands on burnout (Bakker et al. 2005, Nahrgang et al. 2011, Fernet et al. 2013, Robinson et al. 2013). And a lack of resources, such as an absence of social support or a shortage of time in which to complete tasks, increases employees’ experience of burnout (Bakker and Demerouti 2007). The JD-R framework models how formal roles in organizations relate to employees’ burnout experience (Crawford et al. 2010). We build on this perspective to examine how the *informal* role of brokering across structural holes relates to brokers’ experience of burnout.

By bridging across disconnected individuals, brokers are exposed to diverse and potentially conflicting information (Burt 1992). Accessing, assimilating, and recombining diverse information derived from multiple sources requires cognitive effort (Stovel and Shaw 2012) that places demands on brokers (Long Lingo

2023). As brokers interact with diverse and unacquainted individuals, they face the challenge of adapting to different norms and conventions and managing the role conflict and ambiguity (Mehra and Schenkel 2008, Stovel et al. 2011) that are precursors of burnout (see Lee and Ashforth 1996 for meta-analysis). Developing solutions that fulfill different sets of perspectives requires time and patience (Kellogg 2014, Tasselli and Kilduff 2018, Burt 2021) and can be psychologically and emotionally demanding (Kellogg 2014, Long Lingo 2023). Similarly, the processes of developing and maintaining bridging relationships also require effort and energy (e.g., Burt 2010, Shipilov et al. 2014) because each relationship necessitates individualized and dedicated attention (Ocasio 1997).

Besides increasing demands, brokering across structural holes negatively affects the resources available to brokers. First, brokering across different groups can limit the availability of social and psychological resources. Group members may see brokers as untrustworthy and lacking legitimacy (Friedman and Podolny 1992, Xiao and Tsui 2007, Iorio 2022), which can lead them to provide diminished social support and be less willing to cooperate with the brokers (McEvily and Zaheer 1999). Second, if time and energy are devoted to creating and maintaining relationships with disconnected alters, then less time and energy are available to access the resources that can ameliorate job stress (Bakker et al. 2003). Occupying a position that bridges disconnected others can bring with it an imbalance of role demands relative to role resources.

### Two Types of Brokering Behaviors and Burnout

However, not all brokers occupying structural holes experience the same level of role demands and availability of resources. We argue that the level of demands brokers are exposed to and the level of resources available to them depend on the types of brokering behaviors in which they engage. In line with prior research (Simmel 1950, Soda et al. 2018, Halevy et al. 2019), we distinguish between two types of brokering behaviors. *Tertius iungens* brokering involves bringing people together to form new connections thereby closing structural holes (e.g., Obstfeld 2005). *Tertius separans* brokering involves maintaining separation between people thereby keeping open structural holes (Burt 1992).

We argue that *tertius iungens* brokering, relative to *tertius separans* brokering, reduces the demands inherent in spanning structural holes. As a result of *tertius iungens* brokering, the alters interact together and thus have the possibility of reconciling their differences and preventing or resolving conflicts that brokers otherwise deal with (Stovel et al. 2011). Direct communication between the alters is likely to reduce the amount of diverse information brokers need to process as well as the need to transfer, translate, or reframe such information

(Obstfeld et al. 2014). Connections between alters also reduce the amount of time and energy brokers need to spend sustaining dyadic relationships with each alter (Burt 2000).

*Tertius iungens* brokering also provides more psychological resources than *tertius separans* brokering. The creation of a direct relationship between alters contributes to generating a denser social structure that is conducive to accessing social and emotional support (Coleman 1988, Acock and Hurlbert 1993, Courtens et al. 1996, Lin 1999). Being seen to close the gaps in social networks can reduce the perception in the eyes of colleagues that the broker is untrustworthy (Iorio 2022). People engaging in *tertius iungens* brokering are likely to gain trust from their alters because facilitating connections promotes the perception of benevolence (Halevy et al. 2020). And *tertius iungens* brokering can replenish brokers' emotional energy (Furnari and Rolbina 2018) because direct meetings between brokers and disconnected alters increase the potential for shared emotional energy (Collins 2014).

By contrast, engaging in *tertius separans* brokering sustains the cognitive, social, and emotional demands placed on brokers in terms of information processing load, translation requirements, and the effortful maintenance of relationships with disconnected alters. The absence of direct connections between alters inherent to *tertius separans* brokering also implies fewer opportunities for psychological or emotional resource replenishment. Even brokers who engage in *tertius separans* brokering in order to help disconnected alters may fail to gain sufficient emotional benefit to offset the taxing emotional labor of attending to and coordinating the diverse needs of different groups (Kellogg 2014).

In sum, *tertius separans* brokering, relative to *tertius iungens* brokering, requires brokers to sustain the demands placed on them by their informal role without providing sufficient opportunity to replenish resources, creating an imbalance of demands over resources that heralds burnout.

**Hypothesis 1.** *Brokers who engage in tertius separans brokering, relative to tertius iungens brokering, experience a higher level of burnout.*

### Brokers' Burnout and Abusive Behavior

So far, we have argued that *tertius separans* brokering leads brokers to experience increased psychological costs in terms of burnout. We now turn to the consequences of brokering for colleagues of brokers. We suggest that brokering-related burnout is likely to lead to abusive behavior toward these colleagues. Extensive research shows that a dimension of burnout (exhaustion) reduces people's ability to control their aggressive impulses resulting in an increased likelihood of aggressive and abusive behaviors toward coworkers

(e.g., Liu et al. 2014, Barnes et al. 2015, Lam et al. 2017). We infer, therefore, that the burnout associated with tertius separans brokering may lead brokers to engage in abusive behavior toward their colleagues in the workplace.

Abusive behavior refers to the “display of hostile verbal and nonverbal behaviors” (Tepper 2000, p. 178) such as humiliating, belittling, and expressing anger. Although abusive behavior is considered a low base-rate phenomenon (Tepper 2007), the consequences of abusive behavior are significant. These behaviors have deleterious effects on abused employees including psychological distress, reduced self-esteem, and increased turnover (see Martinko et al. 2013, Mackey et al. 2017 for reviews). Abusive behavior also lowers the performance of those who work with the abusers (Walter et al. 2015) and can discourage them from seeking feedback from the focal actors (Whitman et al. 2014).

According to the demands and resources perspective (Hobfoll et al. 2018), resource-drained, burnt-out individuals engage in behaviors that protect themselves from losing more resources (Leiter et al. 2014) and resist spending scarce mental resources on controlling their abusive impulses (Ng et al. 2021). Thus, when employees experience burnout, and their resources are exhausted, they are at risk for engaging in abusive and counterproductive work behavior toward others (Bolton et al. 2012, Wheeler et al. 2013, Barnes et al. 2015, Lin et al. 2016, Yam et al. 2016). Moreover, individuals’ resource deprivation is also known to be a proximal cause of aggression (DeWall et al. 2007, Baillien et al. 2011). As tertius separans brokering (relative to tertius iungens brokering) is more taxing and resource-draining, it leads brokers to have less control over their expression of hostile behaviors in subsequent interactions with others at the workplace. Accordingly, we posit the following mediation hypothesis in which *tertius separans* brokering leads to abusive behavior as mediated by burnout.

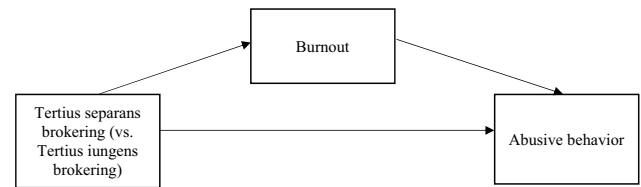
**Hypothesis 2.** *Tertius separans brokering, relative to tertius iungens brokering, increases brokers’ subsequent abusive behavior as a result of a higher level of burnout.*

Figure 1 summarizes the theoretical model predicting how the two different types of brokering behavior affect brokers’ burnout and abusive behavior.

## Research Overview

We tested our predictions across three studies. In Study 1, using email data collected over five months, we examined the effects of tertius separans brokering relative to tertius iungens brokering on burnout and abusive behavior for 1,536 employees of a South American university. In Study 2, we replicated Study 1 findings, using a multiwave survey of 242 full-time employees of U.S. organizations who reported their daily brokering behaviors. In Study 3, an

**Figure 1.** Theoretical Model



experiment conducted with 273 full-time employees of U.S. organizations, we manipulated the two types of brokering behaviors to examine the causal claim that tertius separans brokering leads to an increase in burnout, which then triggers individuals to engage in abusive behavior. The details of data, code, and online supplement are available through open science framework (OSF) at the following link: [https://osf.io/s6yeg/?view\\_only=ddf37aa2cf2a42e792a3f9a10f964a6b](https://osf.io/s6yeg/?view_only=ddf37aa2cf2a42e792a3f9a10f964a6b).

## Study 1: Field Study Data and Procedure

We collected data from the employees of a large private South American university. The main campus of the university was located in the second largest city in the country; the university had three secondary campuses in smaller cities. The university also operated a university hospital and a school. The data consisted of three components: email network data constructed from employees’ email exchange records, burnout and abusive behavior data from employee surveys, and demographic data from the university’s human resources (HR) department. This data collection occurred as part of a larger process, required by law, that measured employees’ psychosocial working conditions. Participants received no compensation for their participation.

We monitored internal email communications between all employees in the organization to collect information about senders, recipients, and timing, but we did not access message content. We monitored emails over a five-month period, after which we measured employees’ burnout and abusive behavior using online surveys. Detailed information about the collection and cleaning of the email data are available in the online supplement.

Our complete data set contained information about email communications, burnout, and abusive behavior from 1,536 users (59% female;  $M_{\text{age}} = 45.25$ ,  $SD_{\text{age}} = 9.83$ ; 77% with a bachelor’s degree or higher), out of 2,367 active email users (a 65% response rate).<sup>3</sup> Among them, 56% had a permanent contract and 44% had fixed-term contracts. The organization was organized hierarchically into five levels, 4% of employees were executives, 10% were directors, 45% were professionals,

18% were assistants, and 23% had a support role.<sup>4</sup> A total of 44% were educators (e.g., professors or teachers), 43% were in administrative roles (e.g., administrators, secretaries, receptionists), 2% were doctors and nurses, and 11% had other roles. A total of 68% of the employees were located on the main campus with the three other campuses accounting for 20%, 8%, and 4% of the population of employees. Most employees (88%) worked at the university, 11% of the employees worked at the hospital, and 1% at the school. Over the five-month period, the average number of emails sent per employee was 416.45 ( $SD = 564.76$ ; maximum: 7,609), and the average number of emails received was 413.41 ( $SD = 512.99$ ; maximum: 4,519).

## Measures

**Tertius Separans Brokering (Relative to Tertius Iungens Brokering).** We computed an indicator of *tertius separans brokering relative to tertius iungens brokering* using the temporal brokering measure proposed by Quintane and colleagues (2021). Because this measure is based on behavioral interaction traces left by employees as they engage with each other, it has the advantage of being unaffected by perceptual biases. The use of the measure requires no assumptions concerning whether people broker strategically or are aware of the structural holes around them. Furthermore, the measure captures the brokering process as it unfolds over time, accounting for the temporal sequence and timing of interactions.

Specifically, the temporal brokering index represents the proportion of temporal structural holes that stay open around an individual as the individual communicates with others over time. Instead of being a count of the aggregated number of open versus closed structural holes over the full observation period, the temporal brokering measure considers the time and sequence of email communications to capture the process of brokering as it occurs through time. For each employee, the measure identifies the number of temporal structural holes, that is, the number of sequentially ordered paths of length 2 that the employee mediates within 24 hours.<sup>5</sup> The measure incorporates two important temporal considerations. First, emails need to occur in a *given order* to be considered as part of a brokering sequence. Second, emails need to occur within a *specific amount of time* of each other to be considered as part of the same sequence (Falzon et al. 2018). For example, Actor A sends an email to Actor B (the broker in this case), and, within 24 hours, Actor B subsequently sends an email to Actor C. In this example, there is an order of each path (first A to B and then B to C), and the second path occurs within 24 hours of the first path. This sequence thus characterizes a temporal structural hole centered around B. The temporal structural hole can stay open (if there is no email between A and C within 24 hours of the email from B to

C) or closed (if there is an email between A and C within 24 hours of the email from B to C).

To compute an employee's relative tertius separans brokering, we counted the number of temporal structural holes that stayed open and the number of temporal structural holes that closed over the full observation period for each employee (in the B position). Then, we calculated the *index of tertius separans brokering relative to tertius iungens brokering* by subtracting the number of closed temporal structural holes from the number of open temporal structural holes and dividing the result by the total number of temporal structural holes. The measure places the two types of brokering behaviors on a continuum ranging from  $-1$  indicating complete tertius iungens brokering behavior to  $+1$  indicating complete tertius separans brokering behavior.<sup>6</sup> The scores were skewed, so we log-transformed them.

**Burnout.** We measured employees' *burnout* (0 = never to 4 = very frequently) using the Spanish Burnout Inventory (Gil-Monte et al. 2011) that has been validated for Spanish speaking employees (Gil-Monte and Zúñiga-Caballero 2010). The scale is composed of 15 items, divided into three subscales: emotional exhaustion (four items, e.g., "I feel emotionally exhausted") ( $\alpha = 0.87$ ); cynicism/disengagement (six items, e.g., "I think some things I do at my work are useless") ( $\alpha = 0.82$ ); and enthusiasm toward the job (five items, reverse-scored, e.g., "I see my job as a source of personal accomplishment") ( $\alpha = 0.86$ ). Following prior research (Gil-Monte et al. 2011), we averaged the 15 scores ( $\alpha = 0.90$ ) and log-transformed the composite measure to control for skewness. See the online supplement for the details of the measures used across the studies.

**Abusive Behavior.** Abusive behavior involves aggression toward others (Tepper 2007). Accordingly, we measured participants' abusive behavior with the five-item aggressive reaction subscale (Londoño et al. 2006) that was adapted for Spanish-speaking population from the Ways of Coping Scale (Folkman and Lazarus 1988, Sandín and Chorot 2003). Participants indicated how many times they had engaged in aggressive behavior (1 = never to 6 = always): for example, "I discharge my bad mood on others," and "I behave in a hostile way toward others." We created a composite measure of *abusive behavior* by averaging the scores of the five items ( $\alpha = 0.84$ ).

**Brokerage Position.** We controlled for employees' brokerage positions to verify whether tertius separans brokering behavior affected outcomes above and beyond their structural positions. To measure employees' brokerage position, we calculated constraint, the extent to which the alters of an employee are connected to each other (Burt 1992). First, we aggregated email communications between employees in the organization during the full

observation period, resulting in a 2,367 by 2,367 matrix in which each cell  $(i, j)$  represents the number of emails that  $i$  sent to  $j$ . We then calculated constraint on this valued network using the *igraph* package (Csardi and Nepusz 2006) in R (R Core Team 2019). Our final measure of *brokerage position* for the 1,536 individuals in our sample was the log-transformed constraint variable (Burt 2004) to account for skewness in the distribution.

**Demographics and Work Context.** Previous research has shown that individual demographics may relate to the experience of burnout, such as *gender* (Purvanova and Muros 2010) (1 = female; 0 = others), *age* (Brewer and Shapard 2004) (in years), *job status* (Westman et al. 2001) (1 = permanent, 0 = others), *rank* (Korman et al. 2022) (1 = executives, 2 = directors, 3 = professionals, 4 = assistants, 5 = others; mode = 3), and *education* (Ahola et al. 2006) (1 = secondary school or below, 7 = master's or above; mode = 7).

Given that different work environments may affect employees' experience of burnout, we used dummy variables to control for the *locations and units* in which people worked, that is, the four campuses as well as the university, hospital, and school. Because different occupations affect people's experience of burnout (Maslach et al. 2001), we controlled for *occupation* (1 = doctors and nurses, 2 = professors and teachers, 3 = administrators, 4 = others; mode = 2).

The results presented below are robust to alternative samples that include only the employees of the university (excluding employees from the hospital and the school) or only employees from the main campus of the university. We also specified models without controls as well as models using controls for the volume of emails sent and received, the number of alters, and alternative measures of brokerage position (density and betweenness centrality). Our results, available in the online supplement, are robust to these different specifications.

## Results and Discussion

Table 1 presents descriptive statistics and correlations among variables. Zero order correlations provide initial

indication that employees who engaged more in *tertius separans* brokering were more likely to experience burnout at the end of the five-month observation period ( $r = 0.11, p < 0.01$ ); and those experiencing burnout reported engaging more abusive behavior ( $r = 0.36, p < 0.01$ ).

Results from ordinary least squares (OLS) regressions with robust standard errors (see Table 2) provide further support for Hypothesis 1's prediction that the more employees engaged in *tertius separans* brokering compared with *tertius iungens* brokering, the higher their level of burnout (Model 3,  $b = 0.08, SE = 0.02, p < 0.01$ ) was.<sup>7</sup> Among the controls, we note the significant effects on burnout of occupying a brokerage position ( $b = 0.25, SE = 0.10, p < 0.05$ ), occupying a permanent position ( $b = 0.06, SE = 0.02, p < 0.01$ ), and being younger ( $b = -0.004, SE = 0.001, p < 0.01$ ).

Recall that Hypothesis 2 predicts that *tertius separans* brokering, relative to *tertius iungens* brokering, increases abusive behavior as a result of a higher level of burnout. The results support the hypothesis. We ran a mediation analysis using 10,000 bootstrapped resamples to calculate a 95% confidence interval (CI) for the indirect effects of *tertius separans* brokering on abusive behavior via participants' burnout (Hayes 2017: Model 4) controlling for brokerage position and the aforementioned controls. As depicted in Figure 2, the indirect effect of *tertius separans* brokering on abusive behavior via burnout was significant (effect size = 0.06,  $SE = 0.02$ ; a 95% bootstrapped CI: 0.004–0.10).<sup>8</sup>

In sum, Study 1 results suggest that employees experience burnout to the extent that they engage in *tertius separans* brokering relative to *tertius iungens* brokering, and that increased burnout mediates the relationship between *tertius separans* brokering and employees' abusive behavior. Further, we found that the relative effect of *tertius separans* brokering on burnout was above and beyond the significant effect of employees' brokerage position. The more participants occupied a brokerage position, the more they tended to experience burnout. But beyond this, brokering behavior that kept people apart (rather than bringing people together) increased burnout, and as a result, subsequent abusive behavior.<sup>9</sup>

**Table 1.** Study 1: Descriptive Statistics and Correlations

Variables	M	SD	1	2	3	4	5	6
1. Gender	0.59	0.49						
2. Age (years)	45.25	9.83	-0.13**					
3. Job status	0.56	0.50	0.04	0.27**				
4. Brokerage position	0.86	0.08	0.08**	0.09**	0.09**			
5. Tertius separans brokering <sup>a</sup>	0.57	0.24	0.11**	-0.02	0.03	0.44**		
6. Burnout	0.61	0.30	0.01	-0.08**	0.00	0.12**	0.11**	(0.90)
7. Abusive behavior	1.68	0.63	0.03	-0.02	0.01	0.02	-0.02	0.36** (0.84)

Notes.  $N = 1,536$  for all variables except for abusive behavior where  $n = 1,433$ . Cronbach alphas are indicated in parentheses where applicable. Gender: 1 = female, 0 = others. Job status: 1 = permanent, 0 = others. Two-tailed tests.

<sup>a</sup>Tertius separans brokering relative to tertius iungens brokering.

\*\*  $p < 0.01$ .

**Table 2.** Study 1: OLS Regressions of Tertius Separans Brokering Behaviors on State Burnout and Abusive Behavior

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Outcome		Burnout		Abusive behavior	
Tertius separans brokering <sup>a</sup>	0.14** (0.02)		0.08** (0.02)	-0.15* (0.07)	-0.13 (0.08)
Burnout				0.76** (0.06)	0.79** (0.06)
<i>Control variables</i>					
Brokerage position		0.35** (0.09)	0.25* (0.10)		0.04 (0.21)
Gender		-0.002 (0.02)	-0.01 (0.02)		0.04 (0.03)
Age		-0.01** (0.001)	-0.004** (0.001)		0.003 (0.002)
Job status		0.06** (0.02)	0.06** (0.02)		-0.05 (0.04)
Rank		Included	Included		Included
Education		Included	Included		Included
School		Included	Included		Included
Hospital		Included	Included		Included
Occupation		Included	Included		Included
Campus		Included	Included		Included
Constant	0.53** (0.01)	0.35** (0.14)	0.40** (0.14)	1.29** (0.05)	1.42** (0.31)
R <sup>2</sup>	0.01**	0.07**	0.07**	0.13**	0.16**
Df	[1, 1534]	[22, 1513]	[23, 1512]	[2, 1430]	[24, 1408]
N	1,536	1,536	1,536	1,433	1,433

Notes. Table presents unstandardized beta coefficients. Robust standard errors are in parentheses. Two-tailed tests.

<sup>a</sup>Tertius separans brokering relative to tertius iungens brokering.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

Measuring brokering behavior with email data enabled us to capture how the brokering of information between people related to employees' experience of burnout and engagement in abusive behavior. In Study 2, we sought to replicate and generalize the validity of our results using standard perceptual scales (e.g., Obstfeld 2005, Soda et al. 2018) for brokering behaviors together with a different empirical context and source of data.

### Study 2: Experience-Sampling Survey

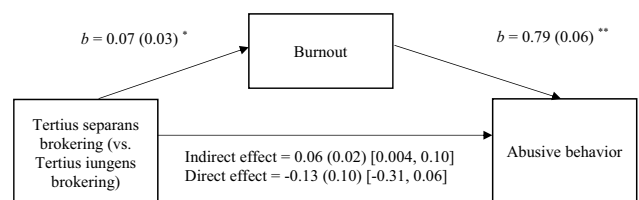
Study 2 extends the results from *observed* brokering behaviors in Study 1 to the examination of whether individuals' *self-reported* brokering behaviors affected burnout and subsequent abusive behaviors. We collected experience-sampled data from 242 full-time employees drawn from multiple U.S. organizations. We preregistered this study at [AsPredicted.org](https://AsPredicted.org) (see the online supplement).

### Participants and Procedure

We recruited participants residing and working in the United States via CloudResearch (<https://www.CloudResearch.com>) (see Litman et al. 2017 for subject details), which provides multiple screening tools to verify online workers and has been used in prior research (Campbell and Hahl 2022, Deeds Pamphile and Rutan 2022). For mundane realism (McDermott 2011), we

recruited only participants who (a) were fully employed in organizations that had multiple employees, (b) frequently interacted with their work contacts on a daily basis, and (c) had engaged in brokering behaviors at work. We included three qualification questions at the beginning of the Time 1 Survey, and only those who responded positively to all questions were allowed to proceed to the main parts of the survey. Regarding (c), we provided a definition of brokering behaviors (e.g., bridging between two unacquainted colleagues by connecting them or keeping them apart) and asked participants if

**Figure 2.** Study 1: The Relationship between Tertius Separans Brokering and Abusive Behavior as Mediated by Burnout



Notes.  $n = 1,433$ . Unstandardized coefficients are presented with robust standard errors in parentheses and 95% confidence intervals in brackets. The model includes the same control variables as in the regression model in Study 1: gender, age, job status, rank, education, occupation, locations, brokerage position.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .



they had recently engaged in these types of behavior. Moreover, following best practices in using online panels (Aguinis et al. 2021), we included an attention check question in the presurvey so that participants failing the question could not proceed to the main parts of the presurvey.

Aiming to have 250 participants in the final sample, we opened 320 positions at CloudResearch for the Time 1 survey considering attrition and exclusion rates reported in the literature. A total of 300 qualified participants provided demographic and work-related characteristics, reported the frequency of engagement in *tertius iungens* and *tertius separans* brokering behaviors on a given day, and reported how burned out they felt on that day. Daily-level job demands and resources can predict meaningful differences within individuals across time (see Schaufeli and Taris 2014 for a review).

We sent the Time 2 survey to the 300 participants who completed the Time 1 survey. A total of 251 participants (84% retention rate) reported the frequency with which they engaged in abusive behavior at work on the day. We measured abusive behavior (Time 2 survey) one day after measuring burnout (Time 1 survey) in order to rule out common method bias (Podsakoff et al. 2012). Participants were compensated depending on the number of surveys that they completed (e.g., \$3.50 for completing both surveys).

Among the 251 participants, nine participants indicated that they did not engage in any *tertius separans* or *tertius iungens* brokering behaviors (i.e., indicated never to all nine items) at Time 1 and were removed from the sample. The final sample included 242 full-time employees working in various organizations (45% female;  $M_{\text{age}} = 36.68$ ,  $SD_{\text{age}} = 10.90$ ; 67% White; 69% a bachelor's degree or higher; all residing and working in the United States). Thirty-one percent held midmanager or higher positions, the average tenure in current role was 5.87 years ( $SD = 5.67$ ), and 39% were employed in large organizations with more than 500 employees, with 12% employed in healthcare and medical, 7% in IT, and 7% in education.

## Measures

**Frequency of Tertius Iungens and Tertius Separans Brokering Behaviors (Time 1).** Participants indicated how many times (1 = never to 7 = six times or more), on this specific day, they engaged in *tertius iungens* brokering behavior by answering six items ( $\alpha = 0.94$ ) adapted from the Tertius Iungens Scale (Obstfeld 2005): for example, “I forged connections between them [two unacquainted work contacts] dealing with a particular issue.” We measured the frequency (1 = never, 7 = six times or more) of engaging in *tertius separans* brokering behaviors on a given day, using three items ( $\alpha = 0.93$ ) adapted from the Separation Orientation Scale (Grosser et al. 2019): for example, “I kept them separate from one

another,” and “I kept them from interacting with one another.”

An exploratory factor analysis (EFA) on the nine items used to measure *tertius iungens* and *tertius separans* brokering behavior showed, as expected, that the six *tertius iungens* items loaded onto one factor (eigenvalue = 5.94, item loadings > 0.69) and the three *tertius separans* items loaded onto another factor (eigenvalue = 1.37, item loadings > 0.85). Thus, we created and used a composite measure of *tertius iungens* and *tertius separans* brokering, averaging the six and three items, respectively.

**State Burnout (Time 1).** We measured *state burnout* regarding participants' experience at work using the 13 items ( $\alpha = 0.96$ ) from the Maslach Burnout Inventory (MBI) scale (Maslach and Jackson 1981) that involve emotional exhaustion and depersonalization: for example, “Today, I felt fatigued,” and “Today, I felt I would treat others as if they were impersonal objects” (1 = strongly disagree to 7 = strongly agree). By emphasizing “today” (see Heatherton and Polivy 1991 for a similar approach), the emphasis was on how burned out participants felt on that day.

**Control Variables (Time 1).** As in Study 1, we controlled for a set of demographic characteristics: *gender* (Purvanova and Muros 2010) (1 = female, 0 = others), *age* (Brewer and Shapard 2004) (in years), *race* (Dowler 2005) (1 = white, 0 = others), *education* (Ahola et al. 2006) (1 = bachelor's degree or higher, 0 = others), and *rank* (Korman et al. 2022) (1 = mid or senior positions, 0 = others). Following previous research (e.g., Soda et al. 2018) we also controlled for work variables that might affect the opportunities for brokering such as current *tenure* (in years), *industry* (three dummy variables for education, medical, and IT sectors), and *organization size* (1 = 500 employees or more, 0 = others).

**Abusive Behavior (Time 2).** We measured participants' *abusive behavior*, adapting the eight items ( $\alpha = 0.96$ ) from the abusive supervision scale (Tepper 2000). Participants indicated how many times (1 = never to 7 = six times or more) they had engaged in abusive behavior with any of their work contacts on that day: for example, “I told a person that he or she was incompetent.”

## Results

Table 3 presents descriptive statistics and correlations among variables. Participants tended to engage less in *tertius separans* brokering behavior ( $M = 2.12$ ,  $SD = 1.45$ ) than in *tertius iungens* brokering behavior ( $M = 2.77$ ,  $SD = 1.43$ ) on the surveyed day. The frequencies of engaging in both types of brokering behaviors were positively correlated with each other ( $r = 0.60$ ,  $p < 0.01$ ).<sup>10</sup> Participants who reported engaging in *tertius*

**Table 3.** Study 2: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender	0.45	0.50										
2. Age (years)	36.68	10.90	-0.09									
3. Race	0.70	0.47	-0.04	0.25**								
4. Education	0.70	0.46	0.02	0.06	-0.05							
5. Rank	0.31	0.46	-0.14*	0.31**	-0.02	0.21**						
6. Organization size	0.39	0.49	-0.06	-0.06	-0.07	0.07	-0.09					
7. Tenure	5.87	5.67	-0.11	0.49**	0.18**	0.07	0.25**	0.07				
8. Tertius iungens brokering	2.77	1.43	0.003	-0.15*	-0.10	0.01	0.12	-0.07	-0.12	(0.94)		
9. Tertius separans brokering	2.12	1.45	-0.01	-0.14*	-0.17*	0.06	0.16*	0.001	-0.001	0.60**	(0.93)	
10. State burnout	3.06	1.45	0.10	-0.19**	0.03	0.10	0.02	0.02	0.02	0.28**	0.42**	(0.96)
11. Abusive behavior	1.59	1.14	-0.03	-0.13*	-0.17**	0.07	0.19**	-0.02	-0.04	0.53**	0.67**	0.41** (0.96)

Notes.  $N = 242$ . Cronbach alphas are indicated in parentheses where applicable. Gender: 1 = female, 0 = others. Race: 1 = white, 0 = others. Education: 1 = undergrad degree or higher, 0 = others, Rank: 1 = mid or senior positions, 0 = others, Organization size: 1 = 500 employees or more, 0 = smaller. Two-tailed tests.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

iungens ( $r = 0.28, p < 0.01$ ) and tertius separans brokering behaviors ( $r = 0.42, p < 0.01$ ) on a specific day also reported symptoms of burnout.

**Hypothesis 1 Testing.** Our regression analyses (Table 4) showed support for Hypothesis 1’s prediction that brokers who engage in tertius separans brokering behavior, relative to tertius iungens brokering behavior, experience

a higher level of burnout. Although both types of brokering predicted burnout (tertius iungens brokering in Model 5:  $b = 0.27, SE = 0.06, p < 0.01$ ; tertius separans brokering behavior in Model 6:  $b = 0.43, SE = 0.06, p < 0.01$ ), the coefficient for tertius separans brokering behavior was significantly different from that of tertius iungens brokering behavior,  $\chi^2 = 8.09, p < 0.01$  (suest and test commands in Stata) (Rhee and Fiss 2014).

**Table 4.** Study 2: OLS Regressions of Tertius Separans and Tertius Iungens Brokering Behaviors on State Burnout and Abusive Behavior

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Outcome	State burnout						Abusive behavior			
Tertius iungens brokering	0.28** (0.06)		0.04 (0.07)		0.27** (0.06)		0.04 (0.07)		0.16** (0.05)	0.15** (0.05)
Tertius separans brokering		0.42** (0.06)	0.40** (0.07)			0.43** (0.06)	0.41** (0.07)	0.47** (0.04)	0.38** (0.05)	0.35** (0.05)
State burnout								0.13** (0.04)	0.12** (0.04)	0.15** (0.04)
Control variables										
Gender				0.18 (0.19)	0.17 (0.18)	0.16 (0.17)	0.16 (0.17)			-0.05 (0.11)
Age				-0.04** (0.01)	-0.03** (0.01)	-0.02* (0.01)	-0.02* (0.01)			-0.002 (0.01)
Race				0.19 (0.20)	0.24 (0.20)	0.37* (0.18)	0.36* (0.18)			-0.14 (0.12)
Rank				0.22 (0.22)	0.07 (0.21)	-0.03 (0.20)	-0.04 (0.20)			0.23 (0.13)
Education				0.28 (0.20)	0.29 (0.20)	0.23 (0.18)	0.24 (0.18)			0.01 (0.12)
Organization size				-0.03 (0.19)	0.01 (0.18)	-0.03 (0.17)	-0.02 (0.17)			0.01 (0.11)
Tenure				0.03 (0.02)	0.03 (0.02)	0.02 (0.02)	0.02 (0.02)			-0.01 (0.01)
Industry				Included	Included	Included	Included			Included
Constant	2.28** (0.20)	2.16** (0.15)	2.11** (0.19)	3.64** (0.38)	2.62** (0.44)	2.28** (0.39)	2.21** (0.42)	0.21 (0.13)	-0.02 (0.14)	0.12 (0.29)
$R^2$	0.08	0.18	0.18	0.11	0.18	0.28	0.28	0.47	0.49	0.51
Df	[1, 240]	[1, 240]	[2, 239]	[10, 231]	[11, 230]	[11, 230]	[12, 229]	[2, 239]	[3, 238]	[13, 228]
Overall F	19.69**	52.01**	26.05**	2.84**	4.50**	8.01**	7.34**	103.81**	75.97**	18.50**

Notes.  $N = 242$ . Unstandardized regression coefficients are displayed with standard errors in parentheses. Two-tailed tests.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

Next, in Model 7, we regressed burnout on both types of brokering behaviors simultaneously. Tertius separans brokering behavior ( $b = 0.41$ ,  $SE = 0.07$ ,  $p < 0.01$ ), but not tertius iungens brokering behavior ( $b = 0.04$ ,  $SE = 0.07$ ,  $p = 0.61$ ), positively predicted burnout. The test command (Rhee and Fiss 2014) showed that the two coefficients in the same model were significantly different from each other,  $F(1, 229) = 8.41$ ,  $p < 0.01$ .

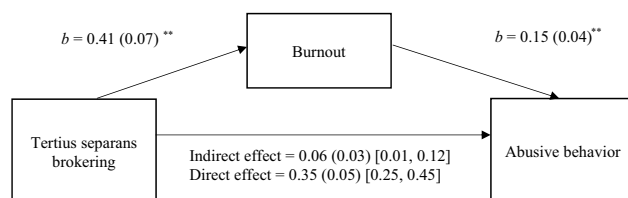
**Hypothesis 2 Testing.** To test Hypothesis 2's prediction that tertius separans brokering, relative to tertius iungens brokering, increases brokers' subsequent abusive behavior as a result of a higher level of burnout, we ran a mediation analysis (Hayes 2017: Model 4) with 10,000 bootstrapped resamples to calculate 95% CIs for the indirect and direct effects of tertius separans brokering on abusive behavior via state burnout. In the current analysis, we controlled for tertius iungens brokering as well as the aforementioned demographic and work-related covariates. As depicted in Figure 3, the indirect effect (effect size = 0.06,  $SE = 0.03$ , a 95% CI: 0.01–0.12) of tertius separans brokering on abusive behavior via burnout was significant.<sup>11</sup> See Table 4 (Model 10) for results from regression analysis with all control variables.

We conducted two robustness checks. First, we tested the indirect effect of tertius iungens brokering on abusive behavior via burnout, controlling for tertius separans brokering. The indirect effect of tertius iungens brokering on abusive behavior through burnout was insignificant (effect size = 0.01,  $SE = 0.01$ , a 95% CI: -0.02, 0.03). Next, we also created an index measure of tertius separans similar to the measure we used for Study 1 to ensure a more direct comparison between the studies. The analyses using the index measure also support Hypotheses 1 and 2 (see the online supplement for the details).<sup>12</sup>

## Discussion

This study replicates the results of Study 1 in a different context and by measuring brokering behaviors with

**Figure 3.** Study 2: The Relationship between Tertius Separans Brokering and Abusive Behavior as Mediated by Burnout



Notes.  $n = 242$ . Unstandardized coefficients are presented with standard errors in parentheses and 95% confidence intervals in brackets. The model includes the same control variables as in the regression model in Study 2: gender, age, race, rank, education, organization size, tenure, industry, as well as tertius iungens.

\*\*  $p < 0.01$ .

self-reported scales. Employees who engaged in tertius separans brokering on a given day, relative to those who engaged in tertius iungens brokering, experienced a higher level of burnout, which then led to more engagement in abusive behavior on the following days.

## Study 3: Experimental Study

Thus far, two studies have provided evidence supporting Hypotheses 1 and 2. In Study 3, we ran an experimental study to examine the causal claim that tertius separans brokering (compared with tertius iungens brokering) leads to more engagement in abusive behavior via increased burnout. We designed the experiment to have three between-participant conditions: *tertius separans* brokering, *tertius iungens* brokering, and a *control* condition (the absence of a structural hole). This design enabled us to compare the effects of tertius iungens and tertius separans on burnout and abusive behavior and also to compare the effect of each brokering behavior against nonbrokering activities (e.g., interacting with others in the absence of a structural hole). We preregistered this study at [AsPredicted.org](https://AsPredicted.org) (see the online supplement).

## Participants

We recruited participants via Cloud Research. We followed similar practices to the ones used in Study 2 to ensure the quality of the data. For example, we only recruited participants who were currently employed and working with multiple coworkers. Also, only participants who passed the attention check question at the beginning of the survey were able to proceed to the main survey.

We predetermined the sample size as 251, using G\*power 3 (Faulkner et al. 2004) to detect a medium-sized ( $f = 0.25$ ) effect with a power of 0.95. We opened 300 positions on the CloudResearch platform, and 273 participants (52% female;  $M_{age} = 36.51$ ,  $SD_{age} = 10.28$ ; 71% White; 77% a bachelor's degree or higher; all residing and working in the United States) participated in the experiment in exchange for \$2.50. Among them, 34% held midmanager or higher positions. Fifteen percent were employed in education, 14% in health and medical services, and 7% in IT.

## Procedure and Measures

At the beginning of the experiment, participants were told that they would engage in a workplace interaction simulation. Following prior research (Soda et al. 2018), to immerse participants in vignettes, we asked them to recall and nominate (using initials or nicknames) two work contacts from among their coworkers, managers, subordinates, and customers. In the *tertius iungens* and *tertius separans* conditions, participants recalled two work contacts who were not acquainted with each

other. Participants in the *control* condition recalled two work contacts who were acquainted with each other.

**Brokering Manipulation.** Next, participants were asked to imagine that they were working with the two nominated work contacts in a newly merged firm (see the online supplement for the full vignettes). We manipulated brokering type as follows. In the *tertius separans* condition, participants served as the primary barrier between the two unacquainted coworkers by keeping them apart. In the *tertius iungens* condition, participants served as the primary matchmaker between the two unacquainted coworkers by bringing them together. In the *control* condition, participants interacted with the two acquainted coworkers, in other words, in closure. To make participants immersed in the work situation, we asked them to write a short essay concerning what they would do to bring the coworkers together [keep the coworkers apart] [collaborate with the coworkers], and how they would feel during and after the process. Previous research has used a similar approach to strengthen the manipulation (e.g., Galinsky et al. 2003).

**Manipulation Check.** As a manipulation check, we included seven items (see the online supplement for complete items), taken from existing scales, to measure *tertius separans* and *tertius iungens* brokering behaviors. Participants self-reported their *tertius iungens* brokering, using the four items ( $\alpha = 0.93$ ) adapted from the *tertius iungens* scale (Obstfeld 2005), similar to what we used in Study 2: for example, “In the situation, I introduced [Person A] and [Person B] to each other.” Participants reported their *tertius separans* brokering, using the three items ( $\alpha = 0.95$ ) adapted from the Separation Orientation Scale (Grosser et al. 2019): for example, “I maintained separation between [Person A] and [Person B].” In addition, we added three items ( $\alpha = 0.83$ ) to measure participants’ activities in closure: for example, “[Person A] and [Person B] and I knew each other before the merger.” All items were measured on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree).

**Burnout.** We measured *burnout* using the same 13 items ( $\alpha = 0.98$ ) as in Study 2.

**Abusive Behavior.** Next, participants imagined themselves in another work situation where one of their subordinates made the same type of mistake repeatedly. Participants indicated the extent to which they would engage in *abusive behavior* toward the person (1 = not at all to 7 = very much). We adapted the eight items ( $\alpha = 0.92$ ) from the abusive supervision scale (Tepper 2000) to measure behavioral intentions.<sup>13</sup>

## Results

**Manipulation Check.** We ran a set of one-way (brokering type: *tertius separans*, *tertius iungens*, and *control*) analyses of variance (ANOVAs) on three manipulation check items, respectively. The main effect of brokering type was significant in all analyses ( $F_s > 112.66$ ,  $p_s < 0.01$ ). As shown in Table 5, simple effects analyses showed that our manipulations were effective. For example, the higher score of participants in the *tertius separans* condition indicated that they tended to keep the two coworkers apart in the work scenario more than was the case for participants in the *tertius iungens* and the *control* conditions.

**Hypothesis 1 Testing.** Hypothesis 1 predicts that those who engage in *tertius separans* brokering will experience more burnout than those who engage in *tertius iungens* brokering. This hypothesis was supported. A one-way ANOVA showed a main effect of brokering type on burnout,  $F(2, 270) = 62.95$ ,  $p < 0.01$ ,  $\eta_p^2 = 0.32$ . Simple effects analyses (see Table 5 for mean scores by condition) showed that participants’ burnout in the *tertius separans* condition ( $M = 4.75$ ,  $SD = 1.55$ ) was higher than in the *tertius iungens* condition ( $M = 2.51$ ,  $SD = 1.66$ ),  $p < 0.01$  (95% CI for difference: 1.78–2.70). Burnout in the *tertius separans* condition was also higher than in the *control* condition ( $M = 2.35$ ,  $SD = 1.48$ ),  $p < 0.01$  (95% CI for difference: 1.93–2.86). The levels of burnout in the *tertius iungens* and *control* conditions were not significantly different,  $p = 0.49$  (95% CI for difference: –0.29, 0.61).

**Hypothesis 2 Testing.** Hypothesis 2 states that *tertius separans* brokering, relative to *tertius iungens* brokering, increases brokers’ subsequent abusive behavior as a result of a higher level of burnout.

**Table 5.** Study 3: Mean Scores of the Variables by Condition

Variable	Tertius separans ( $n = 83$ )	Tertius iungens ( $n = 98$ )	Closure ( $n = 92$ )
Tertius separans manipulation check	6.65 <sub>a</sub> (0.62)	2.08 <sub>b</sub> (1.51)	2.22 <sub>b</sub> (1.52)
Tertius iungens manipulation check	1.71 <sub>a</sub> (1.28)	6.36 <sub>b</sub> (0.60)	4.71 <sub>c</sub> (1.14)
Closure manipulation check	3.00 <sub>a</sub> (1.82)	4.05 <sub>b</sub> (1.60)	6.29 <sub>c</sub> (0.93)
Burnout	4.75 <sub>a</sub> (1.55)	2.51 <sub>b</sub> (1.66)	2.35 <sub>b</sub> (1.48)
Abusive behavior	2.41 <sub>a</sub> (1.31)	2.06 <sub>b</sub> (1.17)	2.02 <sub>b</sub> (1.13)

Notes.  $N = 273$ . Standard deviations are in parentheses. Means in the same row that do not share the same subscript(s) are significantly different from one another at  $p < 0.05$ . Two-tailed tests.

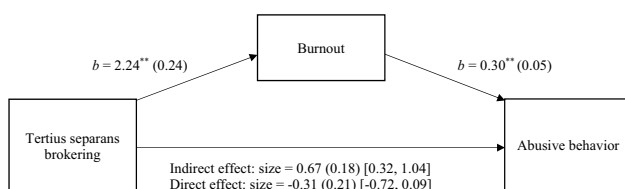
To test Hypothesis 2, we ran a mediation analysis with 10,000 resamples to calculate bootstrapped 95% CIs for the indirect and direct effects of tertius separans brokering on abusive behavior via burnout (Hayes 2017: Model 4). As Hypothesis 2's prediction focuses on examining the comparative indirect effect of tertius separans (versus tertius iungens brokering) on abusive behavior, we conducted a mediation analysis on the subsample ( $n = 181$ ) excluding those in the control condition. As depicted in Figure 4 and Table 6, the indirect effect (effect size = 0.67,  $SE = 0.18$ , a 95% bootstrapped CI: 0.32–1.04) of tertius separans brokering on abusive behavior via burnout was significant. But the direct effect of tertius separans brokering on abusive behavior was not significant (effect size =  $-0.31$ ,  $SE = 0.21$ , a 95% bootstrapped CI including zero).

**Sensitivity Analyses for the Mediation.** One aim of Study 3 was to examine causal evidence of the relationship between tertius separans brokering and abusive behavior mediated by burnout. However, recent research (Imai et al. 2011, Hayes and Preacher 2014) has argued that even mediation analyses on experimental data do not always provide sufficient evidence for causal effects. Consequently, we conducted two additional tests that demonstrate the robustness of our mediation results and the validity of our claim of causal mediation. The details of these robustness checks are available in the online supplement (see Appendix G). The first test is based on the sensitivity analysis proposed by Imai et al. (2010) to account for the absence of randomization of the mediator. The second test focuses on the direction of the mediator-dependent variable relationship using the procedure highlighted by Laghaie and Otter (2023).

## Discussion

Replicating the previous results, Study 3 showed that in comparison with tertius iungens brokering, tertius separans brokering increased participants' burnout and their subsequent likelihood of engaging in abusive behavior.

**Figure 4.** Study 3: The Relationship between Tertius Separans Brokering and Abusive Behavior as Mediated by Burnout



Notes.  $N = 181$  (excluding the control condition). Unstandardized coefficients are presented with standard errors in parentheses and 95% confidence intervals in brackets. Tertius separans brokering was dummy coded (1 = tertius separans, 0 = tertius iungens brokering).

\*\* $p < 0.01$ .

**Table 6.** Study 3: Hierarchical Regressions of Tertius Separans Brokering Behaviors on Burnout and Abusive Behavior

Variables	Step 2	
	Burnout	Abusive behavior
Tertius Separans brokering <sup>a</sup>	2.24** (0.24)	-0.31 (0.21)
Burnout		0.30** (0.05)
Constant	2.51** (0.16)	1.31** (0.18)
$R^2$	0.33	0.17
Overall $F$	$F [1, 179]$ = 86.22**	$F [2, 178]$ = 18.17**

Notes.  $N = 181$ . Standard errors are in parentheses.

<sup>a</sup>Tertius separans brokering (vs. tertius iungens brokering).

\*\* $p < 0.01$ .

Through the experimental design and a set of sensitivity analyses, the study helped provide evidence for the casual relationships that we theorized. Simple effects analyses showed that engaging in tertius iungens brokering, compared with interacting with others in the control condition, did not significantly increase burnout and subsequent abusive behavior. This finding is consistent with our theorizing that the demands associated with brokering unacquainted contacts may be reduced when the contacts interact directly with each other.

## General Discussion

The three studies presented in this paper provide substantial empirical support, across different methods, measurement techniques, and empirical contexts, for the idea that employees who engage in tertius separans brokering, relative to tertius iungens brokering, experience higher levels of burnout, with a subsequent increase in abusive behavior. In Study 1, our dynamic analyses of five months of email data showed that the more employees at a South American university engaged in tertius separans brokering behavior (relative to tertius iungens brokering), the more they suffered from burnout at the end of the five-month period and the more they displayed abusive behavior. In Study 2, we used time-separated data to test the relationships between the two types of self-reported brokering behaviors, burnout, and subsequent abusive behavior toward coworkers. For full-time employees based in the United States, we found that people reported higher levels of burnout on days during which they engaged in tertius separans versus tertius iungens brokering; and this burnout led to higher levels of abusive behaviors toward their coworkers on the day that followed the reported burnout. Although causality is difficult to establish in network research given the multiple challenges of endogeneity (Borgatti et al. 2014, p. 20), in Study 3, we used an experimental design to identify the causal relationships between tertius separans brokering,

burnout, and abusive behavior. We found that people assigned to the tertius separans brokering condition, relative to the tertius iungens brokering condition, reported higher levels of burnout and subsequently indicated a greater likelihood of engaging in abusive behavior. The combined results of the three studies support the theoretical model depicted in Figure 1.

### Contribution to Theory and Research

Our research articulates the possibility that tertius separans brokering entails harm for those engaged in brokering and for those who surround the brokers. Our approach provides a complement to the almost universal emphasis on the positive benefits of brokerage (Halevy et al. 2019). Although the tertius separans brokering process has been examined in prior work (Simmel 1950, Burt 1992, Soda et al. 2018), there has been little theoretical or empirical attention to its *negative* effects on brokers. Given the importance of brokerage and brokering for organizations' functioning (Reagans and McEvily 2003, Stovel and Shaw 2012, Kellogg 2014) as well as the notable benefits of brokerage for individuals (e.g., Burt 1992), it is important to understand the potential psychological and behavioral costs of engaging in different types of brokering behaviors. Prior research has alluded to a potential negative side of tertius separans brokering, but without providing a clear theory or robust empirical evidence. We provide a theoretical account, and supporting empirical evidence, of the process by which tertius separans brokering leads to burnout and subsequent abusive behavior.

We also provide a first attempt to articulate the neglected negative consequences of brokerage for colleagues of brokers (Halevy et al. 2019). In highlighting the negative spillover effects of separans brokering on coworkers via brokers' burnout, we show that the costs of this brokering behavior afflict not only the brokers themselves, but also those colleagues who surround them. Prior research has advanced the notion of social network brokers as informal leaders (Carter et al. 2015) who occupy central coordination roles in organizations (Kleinbaum and Stuart 2014) connecting across unconnected partners (Quintane and Carnabuci 2016). Given their centrality in informal networks, the consequences of brokers' abusive behavior resulting from burning out may ripple across the social structure to damage the morale of many individuals.

Clarifying the link between burnout and abusive behavior contributes to the further examination of the consequences of burnout on observable behaviors (Bakker et al. 2014) beyond well-established health- and work-related outcomes (e.g., withdrawal). Prior research has shown that exhaustion and drained resources lead to aggressive (Liu et al. 2014), abusive (Lam et al. 2017), and deviant behaviors (van Jaarsveld et al. 2010), but this research has tended to focus on exhaustion, which is

only one of the dimensions of burnout (Bakker et al. 2014). Overall, therefore, our research identifies the negative consequences of brokering on focal individuals and those they engage with. We extend the JD-R framework into the realm of informal roles and contribute to burnout theory and research a new focus on interpersonal relationships.

Finally, building on recent calls to move beyond WEIRD<sup>14</sup> sources of data (Henrich et al. 2010, Kitayama 2017) we obtained evidence for our theory from different cultural contexts, including a midincome developing country. Recent research also shows that empirical results are sensitive to measurement and analytical choices (Schweinsberg et al. 2021). Our three studies use different empirical designs, data sources, and measurements for our main variables. Our analytical choices also were tested using robustness checks (see online Appendix D). The triangulation of empirical evidence is important to demonstrate that our results do not depend on a specific form of measurement and can be generalized to other organizations and cultural contexts. However, each study required us to develop a measurement strategy internally consistent with the data structure and the empirical context. This leads to some differences between the studies, notably in the measurement of the independent variable. Our strategy has been to prioritize the internal consistency of each study while providing a sufficient overlap across studies to ensure that the results are comparable such as creating an index measure in Study 2 for compatibility with Study 1 (see online Appendix E for details).

### Limitations and Future Directions

We stressed the psychological costs of engaging in tertius separans brokering but did not address the possibility that the activity of keeping parties apart in pursuit of organizational effectiveness may, under some circumstances, psychologically benefit actors and their alters. For example, community health workers with low expertise and weak professional identity experienced enhanced status when they engaged in tertius separans brokering roles between doctors and lawyers (Kellogg 2014) as they performed vital buffering work between professionals. This leads to the question of whether some individuals, relative to others, flourish in the tertius separans brokering role, experiencing mastery over the role in ways that are valuable to their organizations and to themselves. It also raises the question of whether some brokers may be able to use the informational and performance benefits provided by engaging in tertius separans as resources that would buffer the demands associated with their brokering activity. Future research could provide additional insights into these possibilities.

One unanswered question in our research is whether brokers who engage in both types of brokering (e.g.,

Long Lingo and O'Mahony 2010) might be protected against burnout compared with brokers who engage primarily in tertius separans brokering. Our test of this idea in Study 2, by interacting tertius separans and tertius iungens on burnout, proved nonsignificant, which suggests that engaging in parallel in both types of brokering would not help brokers engaging in tertius separans brokering to avoid experiencing burnout. The increase in demands and loss of resources associated with engaging in tertius separans may have a stronger effect on brokers' burnout compared with resource gains associated with tertius iungens (Hobfoll and Lilly 1993). However, this does not eliminate the possibility that engaging sequentially between tertius separans and tertius iungens could allow tertius separans brokers to recover resources and thereby avoid the burnout that threatens their psychological well-being as well as that of their subordinates. Indeed, recent work shows that brokers gain advantage by periodically removing themselves from the tertius separans role in order to cluster within cohesive groups thereby enhancing their reputations and building trust (Burt and Merluzzi 2016).

In this study, we did not distinguish tertius separans from go-between brokering, an activity that involves the transfer of information between disconnected parties (theoretically similar to Grosser et al. (2019)'s mediation brokerage and Obstfeld et al. (2014)'s conduit brokerage). In terms of observable behaviors, tertius separans and go-between brokering behaviors are indistinguishable because brokers bridge disconnected alters in both cases. Future research could explore in detail the patterns of interactions between brokers and alters to see if separans brokering and go-between brokering have different effects on brokers and their alters. Future research could also investigate brokers' intentions to see if these affected outcomes. For example, tertius separans brokering behavior with a prosocial motive may lead to lower levels of burnout than the same brokering behavior with selfish motives because prosocial motives are likely to provide brokers with psychological resources such as feelings of achievement and satisfaction from reaffirming a positive self-view. Future research can look into the role of brokers' motives as a potential moderator that affects the link between brokering behaviors and burnout.

Finally, the research design of Studies 1 and 2 does not eliminate the possibility that an omitted variable may affect both tertius separans behavior and abusive behavior. For example, the Machiavellianism personality trait has been found to be related to the separation brokering orientation (Grosser et al. 2019) and this personality trait is also likely to lead to abusive behavior (e.g., De Hoogh et al. 2021). Although the experiment in Study 3 provided support for our theorized model, future research might benefit from measuring the

personality traits of brokers to gain a better understanding of the role of personality in the relationship between brokering, burnout, and abusive behavior.

### Practical Implications

Brokering across structural holes is a high risk, high rewards activity. Given the strategic importance of brokers in organizations, our findings suggest that employees and managers should be aware of the potentially negative effects of tertius separans brokering on brokers and their contacts. Much brokering behavior is relatively invisible, connecting as it does across the gaps in social structure. Managers may have to be particularly astute in noticing and providing resources for brokering behavior, particularly in the case of those tertius separans brokers who bridge gaps in the service of organizational goals.

A way to subdue the negative consequences of tertius separans brokering could be to buffer brokers from burnout by providing them with opportunities to periodically disengage so that they can replenish their psychological resources. Individuals who oscillate back and forth between brokering behavior and engagement within closed networks may be more effective in their work than individuals who solely pursue either brokerage or closure (Burt and Merluzzi 2016) in part because they are able to avoid the negative psychological consequences related to the pressures of their informal role. Organizations can encourage employees to take a break (Troughakos et al. 2008) after engaging in tertius separans brokering. Organizations can also enable brokers to understand the prosocial impact of their activities (e.g., Grant and Campbell 2007), thereby helping them to replenish depleted resources.

### Conclusion

Despite the performance benefits associated with brokering across structural holes, our findings suggest that engaging in brokering behaviors may come at a cost to the brokers and to those who interact with them. Importantly, different types of brokering behavior are likely to be experienced quite differently by the brokers and by organizational colleagues who interact with brokers. If there is one overarching message from the current research, it is that engaging in tertius separans brokering puts the broker at an increased risk of burnout and subsequent abusive behavior toward others in the workplace.

### Acknowledgments

This paper benefited from feedback received from seminar participants at ESSEC Business School Management department, UCL School of Management reading group, the Rotterdam School of Management. Earlier versions of this paper were presented at the 2018 INSEAD Network Evolution Conference (NEC), at the 2017 and 2019 Academy of Management

(AOM) Conferences, at the 2020 European Group for Organizational Studies (EGOS) Conference. The authors thank all those who provided comments that improved this paper, and they particularly thank Associate Editor Marissa King and three anonymous reviewers at Organization Science for their insights and guidance. The data used in Study 1 are derived from a larger research project “Predicting early stages of burnout,” which received funding from the University of Los Andes. Two of the authors, Eric Quintane and Camila Umaña Ruiz, are also grateful to Viviola Gómez, Sebastián Segura, and Andres Escobar for their contribution to the research project as well as to Claudia Estevez for her research assistance.

## Endnotes

<sup>1</sup> Here, we refer to brokers as individuals who span a structural hole (Burt 1992). Following prior research (e.g., Soda et al. 2018, Halevy et al. 2019), we use the term brokering to refer to a set of distinct activities brokers engage in toward their mutually unacquainted contacts. Spanning a structural hole (similar to the concept of brokerage in Halevy et al. 2019) is the necessary precondition for engaging in brokering behaviors. Brokers may span few or many structural holes.

<sup>2</sup> We follow Burt (2021) in treating tertius gaudens as an inclusive category of brokering behaviors that include tertius iungens and tertius separans.

<sup>3</sup> There are some significant differences between respondents and nonrespondents in terms of gender, rank, and occupation. However, the differences are relatively small, and accounting for these biases does not substantively alter our results.

<sup>4</sup> The hierarchical distinction between assistants and employees providing support is based on company records. Our results are robust to collapsing these two categories of employees.

<sup>5</sup> This amount of time defines emails that can be considered part of a sequence and thus that a broker can mediate (Kontoleon et al. 2013). Each email in the sequence marks the beginning of a new 24-hour period during which other emails that complete the temporal structural hole motif are counted. Our results are robust to values ranging from 12 hours to 5 days (see the online supplement for details).

<sup>6</sup> Tertius iungens and tertius separans are typically (e.g., Grosser et al. 2019) measured as different orientations toward brokering. In measuring these two orientations on a continuum, we follow prior observational research (e.g., Long Lingo and O’Mahony 2010) that captures within individual variation in brokering: Given exposure to a set of structural holes, the same person switches between different brokering orientations as needed. Thus, we capture the extent to which each individual relies on tertius separans relative to tertius iungens in dealing with the structural holes that the individual is exposed to. Our results are consistent when measuring tertius iungens and tertius separans separately (see the online supplement).

<sup>7</sup> In an additional analysis, we also found that brokers who engage in tertius separans brokering with alters across different (versus the same) geographic or organizational units experience a higher level of burnout, which is consistent with our theoretical argument.

<sup>8</sup> The results remained consistent when we conducted the mediation analysis without controls.

<sup>9</sup> As part of the legally mandated survey on psychosocial working conditions, participants also indicated the extent to which they experienced their job as demanding. As our research theorizes different job demands for the two brokering behaviors, we conducted additional analyses to test our theoretical mechanism. We found that tertius separans (but not tertius iungens) had a significant effect

on perceived job demands, which then affected brokers’ experience of burnout (see Appendix H in the online supplement for additional information).

<sup>10</sup> The positive correlation between TI and TS brokering behaviors measured via survey is consistent with prior research showing that brokers can engage in the two types of brokering behaviors across different triads (e.g., Long Lingo and O’Mahony 2010, Obstfeld et al. 2014). Grosser et al. (2019) report a correlation of .21 between TS and TI and of .66 between TI and mediation. The stronger correlation that we report between TS and TI may be due to our focus on brokering behaviors versus a focus on brokering orientation for Grosser et al. (2019).

<sup>11</sup> The results remained consistent when we conducted the mediation analysis without controls.

<sup>12</sup> To rule out the possibility that underlying differences in burnout conditions could affect our results, we also separately conducted a three-wave survey in which we measured participants’ baseline burnout at Time 1, state-level burnout and brokering behavior at Time 2, and abusive behavior at Time 3. We performed the same analyses on a sample of 134 employees who completed all three surveys, including baseline burnout as a control. The results confirm our finding that engaging in tertius separans brokering behaviors is significantly associated with employees’ state burnout and subsequent behaviors, above and beyond the effects of their chronic burnout on those outcomes.

<sup>13</sup> The mean score of abusive behavior was between 2.02 and 2.41. We speculate that social desirability response bias (Van de Mortel 2008) might have played some role as we used self-reported measures of abusive behavior across studies. Abusive behavior is considered a low base-rate phenomenon (Tepper 2007), and the mean scores of abusive behavior in our data are consistent with prior research (see Mackey et al. 2017 for a meta-analysis of the scale).

<sup>14</sup> Individuals from Western, educated, industrialized, rich, democratic backgrounds (Henrich et al. 2010, p. 61).

## References

- Acocck AC, Hurlbert JS (1993) Social networks, marital status, and well-being. *Soc. Networks* 15(3):309–334.
- Aguinis H, Villamor I, Ramani RS (2021) Mturk research: Review and recommendations. *J. Management* 47(4):823–837.
- Ahola K, Honkonen T, Isometsä E, Kalimo R, Nykyri E, Koskinen S, Aromaa A, Lönnqvist J (2006) Burnout in the general population: Results from the Finnish health 2000 study. *Soc. Psychiatry Psychiatr. Epidemiol.* 41(1):11–17.
- Alarcon GM (2011) A meta-analysis of burnout with job demands, resources, and attitudes. *J. Vocat. Behav.* 79(2):549–562.
- Baillien E, Rodriguez-Muñoz A, den Broeck AV, Witte HD (2011) Do demands and resources affect target’s and perpetrators’ reports of workplace bullying? A two-wave cross-lagged study. *Work Stress* 25(2):128–146.
- Bakker A, Demerouti E, Schaufeli W (2003) Dual processes at work in a call centre: An application of the job demands – resources model. *Eur. J. Work Organ. Psych.* 12(4):393–417.
- Bakker AB, Demerouti E (2007) The Job Demands-Resources model: State of the art. *J. Management Psych.* 22(3):309–328.
- Bakker AB, Demerouti E (2017) Job Demands–Resources theory: Taking stock and looking forward. *J. Occup. Health Psych.* 22(3):273–285.
- Bakker AB, Demerouti E, Euwema MC (2005) Job resources buffer the impact of job demands on burnout. *J. Occup. Health Psych.* 10(2):170–180.
- Bakker AB, Demerouti E, Sanz-Vergel AI (2014) Burnout and work engagement: The JD–R approach. *Annual Rev. Organ. Psych. Organ. Behav.* 1(1):389–411.



- Bakker AB, Demerouti E, Verbeke W (2004) Using the job demands-resources model to predict burnout and performance. *Human Resource Management* 43(1):83–104.
- Barnes CM, Lucianetti L, Bhave DP, Christian MS (2015) “You wouldn’t like me when I’m sleepy”: Leaders’ sleep, daily abusive supervision, and work unit engagement. *Acad. Management J.* 58(5):1419–1437.
- Bolton LR, Harvey RD, Grawitch MJ, Barber LK (2012) Counterproductive work behaviours in response to emotional exhaustion: A moderated mediational approach. *Stress Health* 28(3):222–233.
- Borgatti SP, Brass DJ, Halgin DS (2014) Social network research: Confusions, criticisms, and controversies. Brass DJ, Labianca G (JOE), Mehra A, Halgin DS, Borgatti SP, eds. *Research in the Sociology of Organizations* (Emerald Group Publishing Limited, Bradford, UK), 1–29.
- Borysenko K (2019) Burnout is now an officially diagnosable condition: Here’s what you need to know about it. *Forbes* (May 29), <https://www.forbes.com/sites/karlynborysenko/2019/05/29/burnout-is-now-an-officially-diagnosable-condition-heres-what-you-need-to-know-about-it/>.
- Brewer EW, Shapard L (2004) Employee burnout: A meta-analysis of the relationship between age or years of experience. *Human Resource Dev. Rev.* 3(2):102–123.
- Burt RS (1992) *Structural Holes: The Social Structure of Competition* (Harvard University Press, Cambridge, MA).
- Burt RS (2000) Decay functions. *Soc. Networks* 22(1):1–28.
- Burt RS (2004) Structural holes and good ideas. *Amer. J. Sociol.* 110(2):349–399.
- Burt RS (2005) *Brokerage and Closure: An Introduction to Social Capital* (Oxford University Press, Oxford, UK).
- Burt RS (2007) Secondhand brokerage: Evidence on the importance of local structure for managers, bankers, and analysts. *Acad. Management J.* 50(1):119–148.
- Burt RS (2010) *Neighbor Networks: Competitive Advantage Local and Personal* (Oxford University Press, Oxford, UK).
- Burt RS (2015) Reinforced structural holes. *Soc. Networks* 43:149–161.
- Burt RS (2021) Structural holes: Capstone, cautions, and enthusiasms. Small ML, Perry BL, Pescosolido B, Smith EB, eds. *Personal Networks: Classic Readings and New Directions in Ego-Centric Analysis* (Cambridge University Press, New York), 384–416.
- Burt RS, Merluzzi J (2016) Network oscillation. *Acad. Management Discov.* 2(4):368–391.
- Campbell EL, Hahl O (2022) He’s overqualified, she’s highly committed: Qualification signals and gendered assumptions about job candidate commitment. *Organ. Sci.* 33(6):2451–2476.
- Carter DR, DeChurch LA, Braun MT, Contractor NS (2015) Social network approaches to leadership: An integrative conceptual review. *J. Appl. Psychol.* 100(3):597–622.
- Coleman J (1988) Social capital in the creation of human capital. *Amer. J. Sociol.* 94:S95–S120.
- Coleman J (1990) *Foundations of Social Theory* (Harvard University Press, Cambridge, MA).
- Collins R (2014) *Interaction Ritual Chains* (Princeton University Press, Princeton, NJ).
- Courtens AM, Stevens FCJ, Crebolder HFJM, Philipsen H (1996) Longitudinal study on quality of life and social support in cancer patients. *Cancer Nurs.* 19(3):162–169.
- Crawford ER, LePine JA, Rich BL (2010) Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *J. Appl. Psychol.* 95(5):834–848.
- Csardi G, Nepusz T (2006) The igraph software package for complex network research. *InterJournal Complex Systems* 1695(5):1–9.
- De Hoogh AHB, Den Hartog DN, Belschak FD (2021) Showing one’s true colors: Leader Machiavellianism, rules and instrumental climate, and abusive supervision. *J. Organ. Behav.* 42(7):851–866.
- Deeds Pamphile V, Ruttan RL (2022) The (bounded) role of stated-valued value congruence and authenticity in employee evaluations of organizations. *Organ. Sci.*, ePub ahead of print April 26, <https://doi.org/10.1287/orsc.2022.1578>
- Demerouti E, Nachreiner F, Bakker AB, Schaufeli WB (2001) The Job Demands-Resources model of burnout. *J. Appl. Psychol.* 86(3):499–512.
- DeWall CN, Baumeister RF, Stillman TF, Gailliot MT (2007) Violence restrained: Effects of self-regulation and its depletion on aggression. *J. Experiment. Soc. Psychol.* 43(1):62–76.
- Dowler K (2005) Job satisfaction, burnout, and perception of unfair treatment: The relationship between race and police work. *Police Quart.* 8(4):476–489.
- Falzon L, Quintane E, Dunn J, Robins G (2018) Embedding time in positions: Temporal measures of centrality for social network analysis. *Soc. Networks* 54:168–178.
- Faulkner J, Schaller M, Park JH, Duncan LA (2004) Evolved disease-avoidance mechanisms and contemporary xenophobic attitudes. *Group Processes Intergroup Relat.* 7(4):333–353.
- Fernet C, Austin S, Trépanier SG, Dussault M (2013) How do job characteristics contribute to burnout? Exploring the distinct mediating roles of perceived autonomy, competence, and relatedness. *Eur. J. Work Organ. Psychol.* 22(2):123–137.
- Folkman S, Lazarus R (1988) *Manual for the Ways of Coping Scale* (Consulting Psychologists Press, Palo Alto, CA).
- Foulk TA, Lanaj K, Tu MH, Erez A, Archambeau L (2018) Heavy is the head that wears the crown: An actor-centric approach to daily psychological power, abusive leader behavior, and perceived incivility. *Acad. Management J.* 61(2):661–684.
- Friedman RA, Podolny J (1992) Differentiation of boundary spanning roles: Labor negotiations and implications for role conflict. *Admin. Sci. Quart.* 37(1):28–47.
- Furnari S, Rolbina M (2018) Brokerage styles and interaction rituals in creative projects: Toward an interactionist perspective on brokerage. Jones C, Maoret M, eds. *Research in the Sociology of Organizations* (Emerald Publishing Limited, Bingley, UK), 17–45.
- Galinsky AD, Gruenfeld DH, Magee JC (2003) From power to action. *J. Personality Soc. Psychol.* 85(3):453–466.
- Gil-Monte PR, García-Jueas JA, Núñez E, Carter N, Roldán MD, Caro M (2011) *Spanish Burnout Inventory (SBI, CESQT, CESQT-PD)*. [Database record] APA PsycTests (American Psychological Association, Washington, DC).
- Gil-Monte PR, Zúñiga-Caballero LC (2010) Factorial validity of the “Spanish Burnout Inventory” (SBI) in a sample of Mexican doctors. *Universitas Psychologica* 9(1):169–178.
- Grant AM, Campbell EM (2007) Doing good, doing harm, being well and burning out: The interactions of perceived prosocial and antisocial impact in service work. *J. Occup. Organ. Psychol.* 80(4):665–691.
- Grosser TJ, Obstfeld D, Labianca G (Joe), Borgatti S (2019) Measuring mediation and separation brokerage orientations: A further step toward studying the social network brokerage process. *Acad. Management Discov.* 5(2):114–136.
- Halevy N, Halali E, Cohen TR (2020) Brokering orientations and social capital: Influencing others’ relationships shapes status and trust. *J. Personality Soc. Psychol.* 119(2):293–316.
- Halevy N, Halali E, Zlatev JJ (2019) Brokerage and brokering: An integrative review and organizing framework for third party influence. *Acad. Management Ann.* 13(1):215–239.
- Hayes AF (2017) *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, 2nd ed. (Guilford Press, New York).
- Hayes AF, Preacher KJ (2014) Statistical mediation analysis with a multicategorical independent variable. *Br. J. Math. Statist. Psychol.* 67(3):451–470.
- Heatherton TF, Polivy J (1991) Development and validation of a scale for measuring state self-esteem. *J. Personality Soc. Psychol.* 60(6):895–910.

- Henrich J, Heine SJ, Norenzayan A (2010) The weirdest people in the world? *Behav. Brain Sci.* 33(2–3):61–83.
- Hobfoll SE, Halbesleben J, Neveu JP, Westman M (2018) Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Rev. Organ. Psych. Organ. Behav.* 5(1):103–128.
- Hobfoll SE, Lilly RS (1993) Resource conservation as a strategy for community psychology. *J. Community Psych.* 21(2):128–148.
- Imai K, Keele L, Tingley D (2010) A general approach to causal mediation analysis. *Psych. Methods* 15(4):309–334.
- Imai K, Keele L, Tingley D, Yamamoto T (2011) Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *Amer. Political Sci. Rev.* 105(4):765–789.
- Ingram P, Morris MW (2007) Do people mix at mixers? Structure, homophily, and the “life of the party.” *Admin. Sci. Quart.* 52(4):558–585.
- Iorio A (2022) Brokers in disguise: The joint effect of actual brokerage and socially perceived brokerage on network advantage. *Admin. Sci. Quart.* 67(3):769–820.
- van Jaarsveld DD, Walker DD, Skarlicki DP (2010) The role of job demands and emotional exhaustion in the relationship between customer and employee incivility. *J. Management* 36(6):1486–1504.
- Kellogg KC (2014) Brokerage professions and implementing reform in an age of experts. *Amer. Sociol. Rev.* 79(5):912–941.
- Kitayama S (2017) Journal of personality and social psychology: Attitudes and social cognition. *J. Personality Soc. Psych.* 112(3):357–360.
- Kleinbaum AM, Stuart TE (2014) Inside the black box of the corporate staff: Social networks and the implementation of corporate strategy. *Strategic Management J.* 35(1):24–47.
- Kontoleon N, Falzon L, Pattison P (2013) Algebraic structures for dynamic networks. *J. Math. Psych.* 57(6):310–319.
- Korman JV, Van Quaquebeke N, Tröster C (2022) Managers are less burned-out at the top: The roles of sense of power and self-efficacy at different hierarchy levels. *J. Bus. Psych.* 37(1):151–171.
- Krackhardt D (1999) The ties that torture: Simmelian tie analysis in organizations. Bacharach SB, Andrews SB, Knoke D, eds. *Research in the Sociology of Organizations* (JAI Press, Stamford, CT), 183–210.
- Laghaie A, Otter T (2023) Express: Measuring evidence for mediation in the presence of measurement error. *J. Marketing Res.*, ePub ahead of print January 7, <https://doi.org/10.1177/00222437231151873>
- Lam CK, Walter F, Huang X (2017) Supervisors’ emotional exhaustion and abusive supervision: The moderating roles of perceived subordinate performance and supervisor self-monitoring. *J. Organ. Behav.* 38(8):1151–1166.
- Lee RT, Ashforth BE (1996) A meta-analytic examination of the correlates of the three dimensions of job burnout. *J. Appl. Psych.* 81(2):123–133.
- Leiter MP, Bakker AB, Maslach C (2014) *Burnout at Work: A Psychological Perspective* (Psychology Press, New York).
- Lin N (1999) Social networks and status attainment. *Annual Rev. Sociol.* 25(1):467–487.
- Lin SH, Ma J, Johnson RE (2016) When ethical leader behavior breaks bad: How ethical leader behavior can turn abusive via ego depletion and moral licensing. *J. Appl. Psych.* 101(6):815–830.
- Litman L, Robinson J, Abberbock T (2017) *TurkPrime.com*: A versatile crowdsourcing data acquisition platform for the behavioral sciences. *Behav. Res. Methods* 49(2):433–442.
- Liu Y, Wang M, Chang CH, Shi J, Zhou L, Shao R (2014) Work-family conflict, emotional exhaustion, and displaced aggression toward others: The moderating roles of workplace interpersonal conflict and perceived managerial family support. *J. Appl. Psych.* 100(3):793–808.
- Londoño NH, Henao López GC, Puerta IC, Posada S, Arango D, Aguirre-Acevedo DC (2006) Propiedades psicométricas y validación de la escala de estrategias de coping modificada (EEC-M) en una muestra colombiana. *Universitas Psychologica.* 5(2):327–350.
- Long Lingo E (2023) Digital curation and creative brokering: Managing information overload in open organizing. *Organ. Stud.* 44(1):105–133.
- Long Lingo E, O’Mahony S (2010) Nexus work: Brokerage on creative projects. *Admin. Sci. Quart.* 55(1):47–81.
- Mackey JD, Frieder RE, Brees JR, Martinko MJ (2017) Abusive supervision: A meta-analysis and empirical review. *J. Management* 43(6):1940–1965.
- Martinko MJ, Harvey P, Brees JR, Mackey J (2013) A review of abusive supervision research. *J. Organ. Behav.* 34(S1):S120–S137.
- Maslach C, Jackson SE (1981) The measurement of experienced burnout. *J. Organ. Behav.* 2(2):99–113.
- Maslach C, Schaufeli WB, Leiter MP (2001) Job burnout. *Annual Rev. Psychol.* 52(1):397–422.
- McDermott R (2011) Internal and external validity. Druckman JN, Green DP, Kuklinski JH, Lupia A, eds. *Cambridge Handbook of Experimental Political Science* (Cambridge University Press, New York), 27–40.
- McEvily B, Zaheer A (1999) Bridging ties: A source of firm heterogeneity in competitive capabilities. *Strategic Management J.* 20(12):1133–1156.
- McPherson M, Smith-Lovin L, Cook JM (2001) Birds of a feather: Homophily in social networks. *Annual Rev. Sociol.* 27(1):415–444.
- Mehra A, Schenkel MT (2008) The price chameleons pay: Self-monitoring, boundary spanning and role conflict in the workplace. *Br. J. Management* 19(2):138–144.
- Nahrgang JD, Morgeson FP, Hofmann DA (2011) Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *J. Appl. Psych.* 96(1):71–94.
- Ng BCS, Zhang X, Chen ZXG (2021) A stress perspective on antecedents of abusive supervision: Blaming the organisation when exhausted supervisors abuse. *J. Management Organ.* 27(2):361–381.
- Obstfeld D (2005) Social networks, the tertius iungens orientation, and involvement in innovation. *Admin. Sci. Quart.* 50(1):100–130.
- Obstfeld D, Borgatti SP, Davis J (2014) Brokerage as a process: Decoupling third party action from social network structure. Brass DJ, Labianca G, Mehra A, Hargin DS, Borgatti SP, eds. *Research in the Sociology of Organizations* (Emerald Group Publishing, Bingley, UK), 135–159.
- Ocasio W (1997) Toward an attention-based view of the firm. *Strategic Management J.* 18(S1):187–206.
- Podolny JM, Baron JN (1997) Resources and relationships: Social networks and mobility in the workplace. *Amer. Sociol. Rev.* 62(5):673–693.
- Podsakoff PM, MacKenzie SB, Podsakoff NP (2012) Sources of method bias in social science research and recommendations on how to control it. *Annual Rev. Psych.* 63(1):539–569.
- Purvanova RK, Muros JP (2010) Gender differences in burnout: A meta-analysis. *J. Vocat. Behav.* 77(2):168–185.
- Quintane E, Carnabuci G (2016) How do brokers broker? Tertius gaudens, tertius iungens, and the temporality of structural holes. *Organ. Sci.* 27(6):1343–1360.
- Quintane E, Wood M, Dunn J, Falzon L (2021) Temporal brokering: A measure of brokerage as a behavioral process. *Organ. Res. Methods* 25(3):459–489.
- R Core Team (2019) R: A language and environment for statistical computing [Computer software]. Retrieved from <http://www.R-project.org/>.
- Reagans R, McEvily B (2003) Network structure and knowledge transfer: The effects of cohesion and range. *Admin. Sci. Quart.* 48(2):240–267.
- Rhee EY, Fiss PC (2014) Framing controversial actions: Regulatory focus, source credibility, and stock market reaction to poison pill adoption. *Acad. Management J.* 57(6):1734–1758.

- Robinson SL, O'Reilly J, Wang W (2013) Invisible at work: An integrated model of workplace ostracism. *J. Management* 39(1):203–231.
- Sandín B, Chorot P (2003) Cuestionario de afrontamiento del estrés (CAE): Desarrollo y validación preliminar. *Rev. Psicopatol. Psicol. Clin.* 8(1):39–54.
- Schaufeli WB, Taris TW (2014) A critical review of the job demands-resources model: Implications for improving work and health. Bauer GF, Hämmig O, eds. *Bridging Occupational, Organizational and Public Health: A Transdisciplinary Approach* (Springer Netherlands, Dordrecht, Netherlands), 43–68.
- Schweinsberg M, Feldman M, Staub N, van den Akker OR, van Aert RCM, van Assen MALM, Liu Y, et al (2021) Same data, different conclusions: Radical dispersion in empirical results when independent analysts operationalize and test the same hypothesis. *Organ. Behav. Human Decision Processes* 165:228–249.
- Shipilov A, Labianca G, Kalnysh V, Kalnysh Y (2014) Network-building behavioral tendencies, range, and promotion speed. *Soc. Networks* 39:71–83.
- Simmel G (1950) *The Sociology of Georg Simmel* (Free Press, New York).
- Soda G, Tortoriello M, Iorio A (2018) Harvesting value from brokerage: Individual strategic orientation, structural holes, and performance. *Acad. Management J.* 61(3):896–918.
- Stovel K, Golub B, Milgrom EMM (2011) Stabilizing brokerage. *Proc. Natl. Acad. Sci.* 108(suppl 4):21326–21332.
- Stovel K, Shaw L (2012) Brokerage. *Annual Rev. Sociol.* 38(1):139–158.
- Tasselli S, Kilduff M (2018) When brokerage between friendship cliques endangers trust: A personality-network fit perspective. *Acad. Management J.* 61(3):802–825.
- Tepper BJ (2000) Consequences of abusive supervision. *Acad. Management J.* 43(2):178–190.
- Tepper BJ (2007) Abusive supervision in work organizations: Review, synthesis, and research agenda. *J. Management* 33(3):261–289.
- Trougakos JP, Beal DJ, Green SG, Weiss HM (2008) Making the break count: An episodic examination of recovery activities, emotional experiences, and positive affective displays. *Acad. Management J.* 51(1):131–146.
- Van de Mortel TF (2008) Faking it: Social desirability response bias in self-report research. *Aust. J. Adv. Nurs.* 25(4):40–48.
- Walter F, Lam CK, van der Vegt GS, Huang X, Miao Q (2015) Abusive supervision and subordinate performance: Instrumentality considerations in the emergence and consequences of abusive supervision. *J. Appl. Psych.* 100(4):1056–1072.
- Westman M, Etzion D, Danon E (2001) Job insecurity and crossover of burnout in married couples. *J. Organ. Behav.* 22(5):467–481.
- Wheeler AR, Halbesleben JRB, Whitman MV (2013) The interactive effects of abusive supervision and entitlement on emotional exhaustion and co-worker abuse. *J. Occup. Organ. Psych.* 86(4):477–496.
- Whitman MV, Halbesleben JR, Holmes IVO (2014) Abusive supervision and feedback avoidance: The mediating role of emotional exhaustion. *J. Organ. Behav.* 35(1):38–53.
- Xiao Z, Tsui AS (2007) When brokers may not work: The cultural contingency of social capital in Chinese high-tech firms. *Admin. Sci. Quart.* 52(1):1–31.
- Yam KC, Fehr R, Keng-Highberger FT, Klotz AC, Reynolds SJ (2016) Out of control: A self-control perspective on the link between surface acting and abusive supervision. *J. Appl. Psych.* 101(2):292–301.

---

**Jung Won Lee** is an assistant professor of organizational behavior at ESSEC Business School. She received her PhD from the UCL School of Management in London. Her research interests focus on psychological antecedents and consequences of interpersonal network dynamics and their organizational outcomes.

**Eric Quintane** is an associate professor of organizational behavior at ESMT Berlin. He holds a PhD in management from the University of Melbourne in Australia. His research focuses on understanding the dynamics of interpersonal networks and their consequences for individuals (such as innovative performance or burnout).

**Sun Young Lee** is an associate professor in organizational behavior and the deputy director of equality, diversity and inclusion at the School of Management, University College London. Dr Lee earned an MPP from the University of Chicago and a PhD in organizational behavior from the London Business School. Her research focuses on the topics of diversity in the workplace, biases in managerial decision making, and human agency in social network dynamics.

**Camila Umaña Ruiz** is an assistant professor of organizational behavior and human resources at the business management department, Pontificia Universidad Javeriana in Bogotá Colombia. She received her PhD from Universidad de los Andes. Her research interests include human resources practices, employee motivation, health, and wellbeing, with a particular interest in the role of social interactions in the workplace.

**Martin Kilduff** is professor of organizational behavior and theory at the UCL School of Management. He received his PhD from Cornell University. His research interests focus on social networks, with particular emphasis on cognition, personality, and micro foundations and outcomes.