

## REVIEW ARTICLE OPEN ACCESS

# Not Even Remotely Close: How Co-Location Imbalance Affects Subgroup Formation in Hybrid Teams

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## ABSTRACT

Despite the substantial proliferation of hybrid work, little has been done to reconcile extant individual- and team-level perspectives. This is problematic because it does not acknowledge how individuals' hybrid work practices constrain team-level interactions and subsequent outcomes. Specifically, the extant literature does not yet capture the complex configurations that result from team members alternating between co-located and remote forms of collaboration and how these may provoke the formation of subgroups within the team. In this conceptual paper, we introduce the construct *co-location imbalance*, which we define as the disparity in co-location between different combinations of team members, as a way of capturing geographic configurations in hybrid teams. Through illustrative hybrid teamwork archetypes, we demonstrate the meaning and implications of co-location imbalance on subgroup formation. We then map out a nomological network surrounding co-location imbalance and derive testable propositions on its temporal dynamics and antecedents. Our paper concludes with a discussion of our research's theoretical and practical contributions and directions to advance future research on hybrid teamwork.

Before the Covid-19 pandemic, under one fifth of European workers and even fewer American workers had access to official telecommuting arrangements, meaning that they were allowed to spend some portion of their work time away from their central organizational workplace (U.S. Department of Labor 2019; Eurofund 2020). After the forced switch to fully remote work during the pandemic, current polls indicate that most workers prefer a mix of office and remote work now and in the future (Aksoy et al. 2023; Buffer 2023; Wigert, Harter, and Agrawal 2023). Previously primarily subsumed under the umbrella term “telecommuting” (alternatively: telework, remote work, working from home), these *hybrid* work practices have recently received significant attention in both the academic and non-academic press (e.g., Gratton 2020, 2021; Hilberath et al. 2020). Specifically, “hybrid work” has emerged as an omnibus term for work that is located somewhere along the spectrum of fully in-person versus fully remote work (e.g., Grzegorzczuk et al. 2021; Hilberath et al. 2020; Sewell and Taskin 2015).

Coupled with rapid technological advances like videoconferencing tools (e.g., Zoom and MS Teams) or even more immersive forms of technology-mediated communication (e.g., Metaverse) to promote working together at a distance, teamwork has also become increasingly hybrid—ranging from geographically dispersed teams who sometimes meet face-to-face to co-located teams in which individuals adopt more fluid and mixed work arrangements (e.g., Gibson et al. 2023; Handke et al. 2024).

However, little has been done to integrate individual and team-level perspectives on hybrid work. This reflects the general gap that exists between research clusters focused on virtual work at the individual (i.e., telecommuting) versus team (i.e., virtual teams) levels of analysis (see Bell, McAlpine, and Hill 2023; Raghuram et al. 2019). These research clusters are grounded in different literature streams (as evident through co-citation analysis, Raghuram et al. 2019), focus on different outcomes (e.g., individual well-being and productivity versus

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team processes, emergent states, and performance), and have often been discussed separately in terms of their implications (e.g., for leadership [Bell, McAlpine, and Hill 2019] or challenges during the COVID-19 pandemic [Kniffin et al. 2021; Rudolph et al. 2021]). This is problematic because it does not acknowledge how the nature and extent to which individuals engage in hybrid work practices shape team-level interactions and subsequent outcomes. Furthermore, while hybrid individual work is frequently defined based on the number of office days, remote workdays, or the specific conditions or tasks requiring office presence, conceptualizing collaborative work arrangements requires considering multiple combinations of individual hybrid work practices. However, the existing literature currently lacks a comprehensive mapping of these configurations.

In addition, the dynamic nature of hybrid work models implies that team members working in co-location on one day may differ from those on a subsequent day (or week or month). This fluidity of team configuration also means that our existing knowledge of team geographic configuration in virtual or partially distributed teams (where team members work from different sites, but each member always works from the same site) may not fully extend to hybrid teams. Specifically, in hybrid teams today, the variability in team members' co-location occurs in a much shorter time period than what we know from prior research. Accordingly, the questions we need to ask ourselves with regards to hybrid team functioning will need to revolve not only around who is co-located *with whom* but also *when* and *how often*.

This paper begins with a depiction of the main challenges around our current lack of theorizing around hybrid teamwork before moving on to the role of geographic configurations to understand hybrid team functioning. We demonstrate that hybrid teams are at a unique risk for subgroup formation, more so than fully face-to-face and fully distributed teams. Drawing on earlier work on configural imbalance (e.g., O'Leary and Cummings 2007; O'Leary and Mortensen 2010), we present co-location imbalance (which we define as *the disparity in co-location between different combinations of team members*) as a way of capturing geographic configuration in hybrid teams. Through exemplary hybrid teamwork archetypes, we illustrate the meaning and implications of co-location imbalance on subgroup formation—that is, the emergence of subsets of members of the same work team (see, e.g., Carton and Cummings 2012). We then map out a nomological network surrounding co-location imbalance and derive testable propositions on its temporal dynamics and multi-level antecedents. Finally, we conclude this paper by discussing our research's theoretical and practical contributions and future research directions.

## 1 | Defining Hybrid Teamwork

Virtual work, where employees use technology-mediated communication to complete their tasks from remote locations (Raghuram et al. 2019), has become the “new normal.” Before the Covid-19 pandemic, some organizations offered telecommuting to reduce costs (e.g., travel and office space), save time, and create more opportunities for individuals to improve their work-life balance and productivity (Shockley and Allen 2012; Thompson et al. 2021). Research in this area has primarily

focused on what individuals' work away from a central organizational workplace does to their well-being, work-related attitudes, or productivity (Allen, Golden, and Shockley 2015; Gajendran and Harrison 2007; Raghuram et al. 2019). After the radical switch to “virtual-first” work models with maximum telecommuting levels during the Covid-19 pandemic, many organizations are now attempting to adopt hybrid work models, that is, a combination of individuals working from home and at the office (e.g., Bell, McAlpine, and Hill 2023; Gratton 2021; Grzegorzczak et al. 2021). The dominant models that appear to be emerging involve team members spending roughly half of their workdays remotely. Large companies like Apple, Google, and Citigroup require most employees to be in the office three out of 5 days a week, while Microsoft, Uber, and Facebook have 50/50 office/remote policies (Flex Index 2024). Employees generally support these policies, with the majority of hybrid workers preferring to be in the office 2 to 3 days a week, on average (e.g., Aksoy et al. 2023; Wigert, Harter, and Agrawal 2023).

With organizations increasingly adopting these hybrid work models, teamwork has also become more hybrid, meaning that many teams now operate somewhere on the spectrum of “never vs. always meeting face-to-face” (Cousins, Robey, and Zigers 2007, 461). Although this could technically also extend to teams that span several (globally) distributed office sites but schedule occasional in-person meetings (such as those frequently addressed in the prior literature on virtual and hybrid teams, e.g., Griffith and Neale 2001; Fiol and O'Connor 2005), we will concentrate our theorizing on teams where members are geographically distributed but come together much frequently, within any given week. These teams typically have a shared office space (meaning that they *could* be fully co-located) but consist of members who regularly engage in hybrid work practices. In this paper, we thus define hybrid teams as *teams that regularly switch between different combinations of members working in co-location or remotely, ranging from having all members co-located to all members working remotely* (see, e.g., Bell, McAlpine, and Hill 2023; Handke et al. 2024).

Despite the strong interest and proliferation of hybrid work models, scant academic attention has been paid to what individuals' hybrid work means on a team level. Individual-level studies have considered the effect that individuals' hybrid work/telecommuting has on interaction quality with co-workers (e.g., Collins, Hislop, and Cartwright 2016; Gajendran and Harrison 2007; Windeler, Chudoba, and Sundrup 2017), co-worker attitudes (Golden 2007), or individuals' perceptions of group belongingness (Bennett et al. 2021). However, to date, most studies appear to neglect team-level implications. A few team-level studies have found considerable changes in social networks (Wu et al. 2021) and effects on team performance (Van der Lippe and Lippényi 2020) when employees work remotely. Specifically, Wu et al. (2021) analyzed how the change to remote work during the Covid-19 pandemic was associated with team members creating, dissolving, or renewing both intra-team and inter-team ties (operationalized through the number of virtual meetings with other individuals). Van der Lippe and Lippényi (2020), in turn, found significantly lower manager-evaluated team performance ratings as the team-level average of remote work exceeded 8 h a week. Yet even these two exceptions did not consider the psychological mechanisms or dynamics associated with these

shifts, such as how these would influence team members' perceptions of or relationships with one another. In general, we still lack knowledge on how highly dynamic, that is, weekly or daily shifts in work location impact team functioning because this form of teamwork is, frankly, a new phenomenon (at least on the large scale in which it is playing out post-COVID-19).

While extensive research on “traditional” in-person teamwork provides valuable insights applicable to highly co-located teams (e.g., Hackman and Morris 1975; McGrath 1991; Marks, Mathieu, and Zaccaro 2001), research on virtual teams (e.g., Dulebohn and Hoch 2017; Gilson et al. 2015, 2021) offers relevant insights for teams with minimal co-location who largely coordinate their interactions via communication technologies. However, unlike these scenarios of very high or very low co-location, where team members predominantly work co-located or remotely, hybrid teams have moderate degrees of co-location with a mix of team members working co-located and remote for varying durations. This means that team dynamics become substantially more complicated in the hybrid space “in-between,” the fully co-located and fully remote.

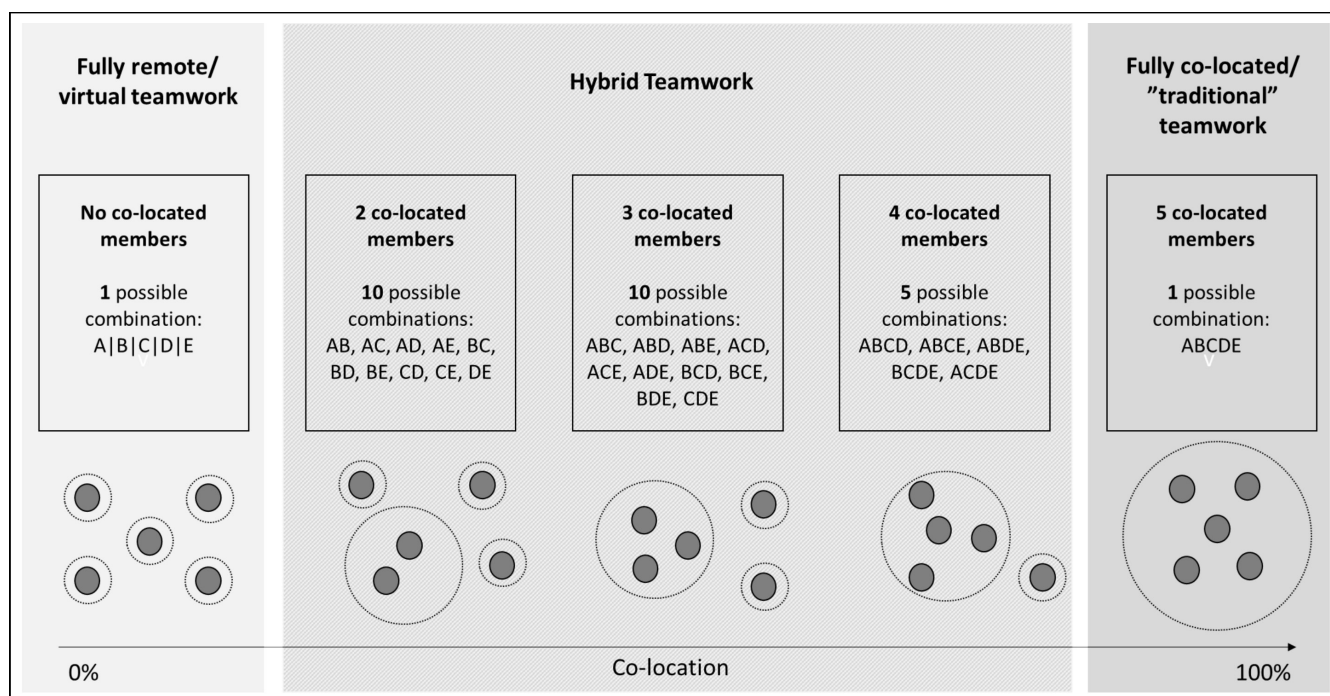
As illustrated in Figure 1, there are many possible geographic configurations and member combinations in hybrid teams, and the complexity of this rises significantly as the number of team members increases. As such, the fundamental question to understanding hybrid team dynamics is no longer “Is the team co-located?” but “Which team members are co-located – and when?”. In the following sections, we thus give an overview of extant knowledge on the effects of team geographic configurations and discuss how this knowledge extends to hybrid teamwork. Specifically, we begin by summarizing prior theorizing on how geographic configurations contribute to subgroup formation through social categorization processes. We then probe

into the nature of subgroup membership given the dynamic geographic configurations characteristic to hybrid teams and discuss the role of hybrid team members' co-location for subgroup membership and formation.

## 2 | Subgroup Formation in Geographically Dispersed Teams

Although little research has considered team virtuality from a configurational perspective, evidence suggests that patterns of intra-team dispersion over different sites (i.e., team geographic configuration) bear important implications for team functioning. Specifically, team geographic dispersion is assumed to impact team functioning through its potential for subgroup formation, that is the emergence of subsets of members of the same work team (e.g., O'Leary and Cummings 2007; O'Leary and Mortensen 2010).

Research on subgroups is typically grounded in the social identity approach (Hogg and Turner 1985; Tajfel and Turner 1979; Turner et al. 1987), which posits that individuals categorize themselves and others into social groups, leading to a sense of shared identity with members of the same social group (in-group) and differentiation from those in others (out-groups). To the extent that individuals' identities are tied to group membership, they tend to hold more favorable opinions of members of the same social group (in-group favoritism) and more negative views of those in others (out-group discrimination). When these categorization processes occur within a work team, the team may split up into subgroups, whereby team members will be more likely to identify with the smaller group (i.e., subgroup) than with the superordinate group (i.e., team), thus fragmenting the team as a whole (Carton and Cummings 2012). The



**FIGURE 1** | Geographic configuration in an exemplary five-person team. Note: Gray circles symbolize team members A–E. Dashed lines indicate work sites, with several gray circles surrounded by the same dashed line representing co-location at the office.

fragmentation of teams into subgroups has been tied to a range of adverse team-level effects, such as on team cohesion, conflict, coordination, learning, and performance (e.g., Lau and Murnighan 2005; Meyer et al. 2014; Thatcher and Patel 2012; O'Leary and Mortensen 2010).

Subgroup formation has been most notably discussed within the literature on team faultlines (e.g., Lau and Murnighan 1998; Meyer and Glenz 2013), that is, “hypothetical lines [that] may split a group into subgroups based on one or more attributes” (Lau and Murnighan 1998, 328). Studies on faultlines and subgroups have primarily concentrated on the team level (Meyer et al. 2014), showing their influence on outcomes such as conflict, satisfaction, and performance (for a meta-analysis, see Thatcher et al. 2024). Limited research exists at the individual level, with exceptions such as Maltarich et al. (2021), who examined the multilevel impact of perceived faultlines, revealing that faultline perception evolves based on relationship conflict expectations and group consensus about those perceived faultlines.

While research on faultlines has primarily focused on demographic attributes (e.g., age, gender, ethnicity; Meyer et al. 2014; Thatcher and Patel 2012), the lack of physical presence in virtual teams may invoke categorization based on less visible factors, such as communication styles, media preferences, and language proficiency. For instance, Klitmøller, Schneider, and Jonsen (2015) found that global virtual teams often experience social categorization due to differences in language proficiency and communication media choices (verbal versus written). Similarly, Cheng and Guo (2015) demonstrated that in virtual communities, where physical interaction is absent, social identity is frequently formed based on the member's knowledge contribution and social interaction.

In hybrid teamwork, however, members' interactions will vary as a function of team members' co-location (see e.g., Blanchard and Allen 2023; Handke et al. 2024), leading to categorization processes that are likely to differ from fully virtual teams. Related research on partially distributed teams has shown that members' geographic location can act as a salient attribute invoking subgroup formation (e.g., Cramton and Hinds 2005; Polzer et al. 2006). Specifically, team members may categorize themselves and others based on their geographic location, resulting in *geographic subgroups* (i.e., at least two team members who are co-located at the same site, see O'Leary and Mortensen 2010). Accordingly, team members will attribute an in-group status to those who share the same location and an outgroup status to team members at other locations. Through this categorization process, team members are more likely to identify with their co-located subgroup than the entire team, reducing their desire to exchange knowledge and cooperate with “outgroup” members. As a result, geographic subgroups have been linked to a range of impairments in crucial team processes and states (see also Carton and Cummings 2013; Cramton 2001; Cramton and Hinds 2005; O'Leary and Mortensen 2010). For instance, Polzer et al. (2006) found that team members experienced less trust and more conflict with remote than with co-located teammates. O'Leary and Mortensen (2010), in turn, showed that geographic subgroups negatively affected not only overall team identification but also transactive memory, conflict, and coordination.

### 3 | Subgroup Formation in Hybrid Teams

Although findings on geographic subgroups align with the general subgroup and team faultlines literature, it is unclear if and how the underlying categorization processes triggering subgroup formation also extend to hybrid teams. Unlike fully virtual teams or partially distributed teams, hybrid teams often have a shared office space. However, unlike fully face-to-face teams, members of hybrid teams will not always use this shared office space to work in full co-location. For example, consider a team with five members: Alex, Blair, Casey, Dana, and Evan. Alex, Blair, and Casey may work together in the office on Monday, Dana may join them on Tuesday, Evan on Wednesday, and all team members may work remotely on Thursday and Friday. Hybrid teams are thus characterized by different patterns of “who is together with whom,” which affects how the team is configured across space and time. Accordingly, a distinguishing feature between virtual/partially distributed and hybrid teams is their *temporal dispersion* (i.e., degree to which members work at the same site at different times).<sup>1</sup>

What is lacking is theory on how team temporal dispersion—the key distinguishing feature between virtual/partially distributed and hybrid teams—is tied to subgroup formation. Similar to other attributes considered in the context of team faultlines, prior research has typically treated geographic location as static. From this perspective, for instance, Alex and Blair may always work together at site X, while Casey, Dana, and Evan all work together at site Y. In these cases, a team member's membership in a geographic subgroup is very clear. However, the temporal dispersion that characterizes hybrid teams means that location is something that will differ not only interindividually (with members being at different sites) but also intraindividually (with individual team members sometimes being at one site and sometimes at another). As it thus becomes increasingly difficult to categorize members based on shared or different locations, hybrid team members' membership in any geographic subgroup can be considered *fuzzy*. This idea is closely linked to the mathematical rationale of fuzzy sets (Li 1989; Smithson and Verkuilen 2006; Zadeh 1965), whereby elements (here: team members) do not strictly have to belong to a set (here: subgroup) but can have degrees of membership in a given set, ranging from 0 (*fully outside of the set*, i.e., no membership) to 1 (*fully inside the set*, i.e., full membership).<sup>2</sup>

Considering the dynamic geographic configurations that can result from team members' hybrid work practices, a hybrid team member could thus identify with multiple geographic subgroups to varying degrees, depending on whom they work with in co-location. Accordingly, rather than considering location as a stable attribute that can invoke subgroup formation through very clear and discrete social categories (e.g., subgroup at location X vs. subgroup at location Y), subgroup formation in hybrid teams will operate via more dynamic *relational identities*. Unlike collective identities, which focus on shared characteristics of a social entity (e.g., “we all work at location X”), relational identities are shaped by individuals' relationships to others (see Methot, Rosado-Solomon, and Allen 2018; Sluss and Ashforth 2007). This means that the degree to which hybrid team members will identify with a given geographic subgroup depends on their relationship with the other members.

### 3.1 | Co-Location and Relationship Strength

The extent to which individuals define themselves in terms of their relationships with others depends on how close these relationships are (see Zhang et al. 2014). Accordingly, subgroup formation in hybrid teams may arise as a function of the *relationship strength*, meaning that team members are more likely to identify with a subgroup that consists of members who they have close relationships with. As relationships are formed and strengthened through interactions and shared experiences (e.g., Jong et al. 2015; Rossignac-Milon et al. 2021; Sluss and Ashforth 2007), opportunities that allow for interaction and/or shared experiences will be essential in determining relationship strength. The opportunities are notably created through team members' co-location.

First, co-located work has been related to more co-worker interactions (Emanuel, Harrington, and Pallais 2023; Fonner and Roloff 2010; Windeler, Chudoba, and Sundrup 2017; Wöhrmann and Ebner 2021) and further appears to provide more opportunities for spontaneous informal conversations, which are particularly important for establishing (close) relationships (Fayard and Weeks 2007; Kraut et al. 1990; Methot, Rosado-Solomon, and Allen 2018; Methot et al. 2021; Zhang et al. 2014). The reason that co-location increases (informal) interactions can be explained through physical proximity. The likelihood that we interact with others depends on the effort involved to initiate these interactions (see Allen 1984; Festinger, Schachter, and Back 1950). As opposed to making a call or writing an email, physical proximity increases the chance of spontaneous, effortless encounters (e.g., running into each other on the way to the coffee machine or walking past the other's desk). Moreover, physical proximity makes it not only easier to ascertain others' availability to communicate (because we can see whether they are immersed in work/do not want to be disturbed) but also encourages conversation merely out of social convention (e.g., Kraut et al. 1990; Sarbaugh-Thompson and Feldman 1998). Findings by Charpignon et al. (2023) further show that hybrid workers with open, shared office spaces were more likely to synchronize their office attendance with teammates and managers than those with closed office spaces, suggesting that individuals intentionally leverage the benefits of physical proximity for increased interaction. As posited by the proximity principle (Festinger, Schachter, and Back 1950), it is thus through (repeated) interactions that physical proximity increases the likelihood of forming and maintaining relationships. Furthermore, recent neuroscientific research has shown that inter-brain synchrony is higher in face-to-face versus technology-mediated interactions, suggesting that face-to-face interactions are the superior mode of communication for strengthening interpersonal connections (Schwartz et al. 2024). In sum, it is through increased (face-to-face) interaction that hybrid team members are likely to have stronger relationships with co-located compared to remote members.

Second, co-located team members have more opportunities for sharing similar experiences (e.g., the same meal selection at the cafeteria, the same office décor and furniture, the same construction site next door) and will have access to the same situational information (e.g., Evan came into the office late, Casey seems to be getting a cold), considering that they share the same

physical environment. Accordingly, working in co-location means sharing both the experience of the work environment itself as well as the of events that take place in this environment, which are not observable to remote working team members (or at least only to a limited extent). It is through these shared experiences that co-location can contribute to more favorable attributions about one another (e.g., understanding that negative behavior could be the result of a difficult situation rather than bad intentions) and closer interpersonal bonds (Armstrong and Cole 2002; Cramton 2002; Cramton, Orvis, and Wilson 2007; Hinds and Mortensen 2005; Kiesler and Cummings 2002). Accordingly, through shared experience, hybrid team members are likely to have stronger relationships with co-located compared to remote members.

#### 3.1.1 | Co-Location as an Predictor of Subgroup Membership

With location being a dynamic attribute in hybrid teams, all team members can show varying degrees of membership in all theoretically existent geographic subgroups. To illustrate how temporal dispersion relates to (theoretical) geographic subgroups in hybrid teams, we draw on the prior definition of a geographic subgroup as at least two co-located members (see O'Leary and Mortensen 2010). As any two members could be co-located in a hybrid team, there are  $n!/k! \cdot (n-k)!$  possible dyadic team member combinations (i.e., geographic subgroups), with " $n$ " being the total number of team members and " $k$ " being the number of members in a geographic subgroup (i.e., two). For instance, in a team of five members (Alex, Blair, Casey, Dana, and Evan), there could be  $5!/2! \cdot (5-2)! = 10$  possible combinations of two members: Alex/Blair, Alex/Casey, Alex/Dana, Alex/Evan, Blair/Casey, Blair/Dana, Blair/Evan, Casey/Dana, Casey/Evan, and Dana/Evan (see Figure 1). From a relational perspective, the degree of membership in a subgroup depends on the relationship strength between the members forming any of these given subgroups. As elaborated above, we argue that co-location generally (though clearly not always) strengthens the relationship between team members. Accordingly, the greater any given pair of team members' co-location extent,<sup>3</sup> the greater also their relationship strength. We thereby propose that

P1. *The degree of membership in a geographic subgroup depends on the extent of co-location with the other member(s) of this subgroup.*

### 3.2 | Team-Level Differences in Co-Location

However, the likelihood of subgroup formation in teams depends not only on in-group but also on out-group categorizations. This means that a subgroup can only emerge under the premise that there are members who are *not* part of this subgroup. In the fuzzy set terms we apply to hybrid teams, subgroup formation is contingent on *differences* in the degree of subgroup membership. This means that subgroups form when hybrid team members show a stronger degree of membership in one subgroup and a weaker one in another/others. As suggested by the literature on team boundary blurring (Mortensen 2014; Mortensen and Haas 2018), when different patterns of interaction arise within

a team (such as through different locations), team members are less likely to agree on team boundaries (i.e., who is a member of the team and who is not) and will instead divide into smaller subgroups. While frequent, high-quality interactions among certain members may allow the development of stronger connections, they can also create feelings of isolation for other team members not included in these interactions. If some team members are consistently co-located and engaging with one another, those with limited interaction may feel marginalized, impacting their sense of belonging and contribution to the team. In sum, we argue that subgroups emerge as a function of intrateam differences in co-location, as the extent of team members' co-location predicts their degree of membership in the same subgroup.

Staying with the example of a five-member team (which results in  $5!/2! \cdot (5-2)! = 10$  dyadic combinations) and a standard five-day workweek, there are  $10^5$  (100 000) different combinations of co-located team member dyads across the week. Such a high variability considerably reduces the likelihood of recurring identical configurations by chance, thereby diminishing the potential formation of stable geographic subgroups such as those indicated by previous research. In reality, however, team members' co-location will not occur completely by chance, such that some combinations of co-located team members will occur more often than others (as we will discuss in a later section), leading to a structural co-location imbalance within the team. As more stable configurations arise, the resulting dynamics may also isolate some team members who are less frequently included, creating a situation in which cohesion within dominant subgroups is achieved at the expense of overall team inclusion and engagement.

In the following section, we discuss how different patterns of team members' co-location contribute toward co-location imbalance, defined as the disparity in co-location between different combinations of team members. By accounting for changes in team members' (co-)location, co-location imbalance differs from extant, static conceptualizations of team geographic configuration (see, e.g., O'Leary and Cummings 2007; O'Leary and Mortensen 2010) and is thus uniquely suited to the context of hybrid teamwork. In the following, we illustrate the meaning and relevance of co-location imbalance through four exemplary archetypes of hybrid teamwork, showing how co-location imbalance impacts the risk of subgroup formation in hybrid teams.

### 3.3 | Archetypes of Hybrid Teamwork

All four archetypes of hybrid teamwork described here represent standard examples of team geographic configurations emerging from different temporal dispersions of office attendance. For the sake of simplicity, all four archetypes refer to a team of five members and a 5-day workweek, with the same average proportion of office days (60%, i.e., 3 days/week) at the team level. We further control for prototypical organizational constraints, resulting in two exemplary scenarios: (1) *fixed number of days*: Each member has to be in the office for (any) three work days a week; and (2) *fixed number of team members*: (any) three team members need to be in the office on each of the five work days. Both scenarios are representative of typical constraints in many organizations. For example, in software development teams, where work can easily be performed remotely but there is also a high degree of

interdependence between team members, there may be the need to fix some minimal days in which members must be present at the office (i.e., scenario "fixed number of days"). On the other hand, in customer support teams, a minimum number of team members available on-site each day to support clients is often necessary (i.e., scenario "fixed number of team members"). We present the four archetypes in order of increasing co-location imbalance.

Figure 2 shows these archetypes in terms of their office attendance in an exemplary week, the co-location extent for each possible combination of team members, and a graph visualization that reflects the distribution of members' co-location extent at the team level. Specifically, while the nodes in these graphs represent the five exemplary team members (Alex, Blair, Casey, Dana, and Evan), the lines connecting these nodes represent the number of days these members have spent in co-location, with thicker lines representing a higher co-location extent (i.e., more days).

#### 3.3.1 | All for One and One for All

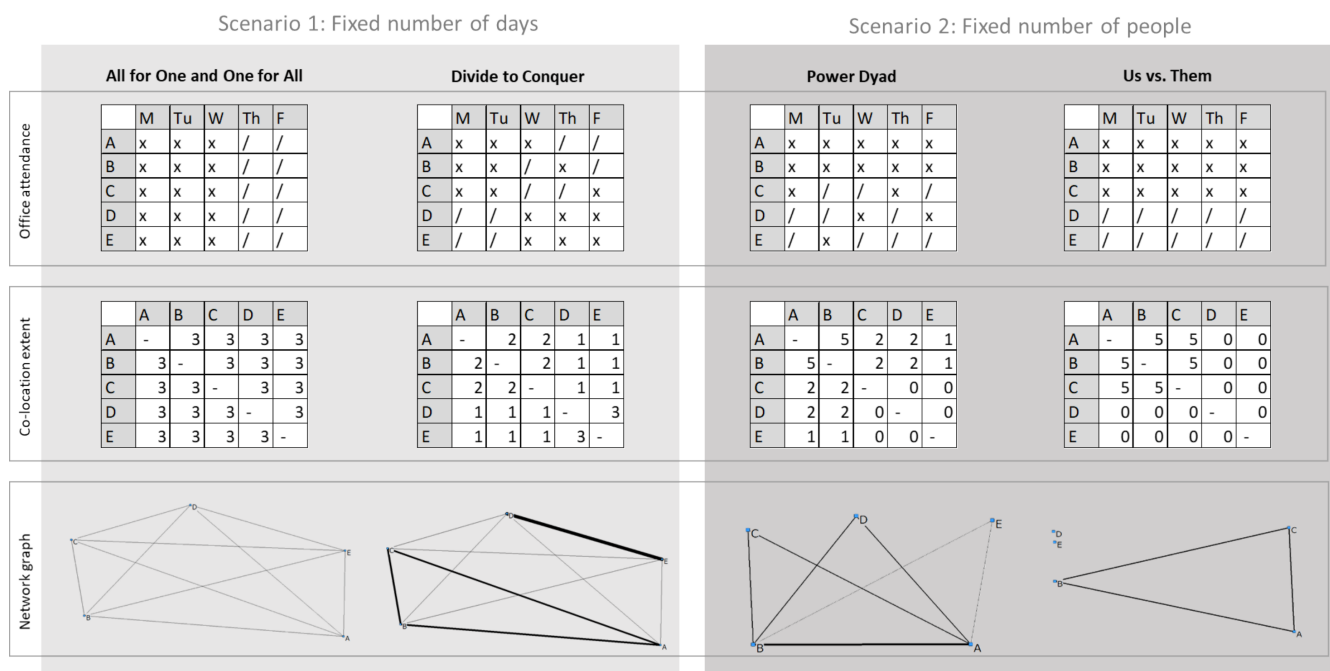
In this hybrid team archetype, all team members are at the office for 3 days (e.g., Tuesday to Thursday) and work remotely on the remaining days (e.g., Monday and Friday). Therefore, this team functions as a traditional, face-to-face team on three work days and as a fully virtual team on two work days, experiencing a conventional face-to-face environment and a fully remote workspace within a single work week. Mathematically, all 10 combinations of co-location possible in a five-person team are represented by a co-location extent of three: All dyads are collocated on 3 out of 5 days. Accordingly, this archetype exhibits no co-location imbalance, as there are no differences in co-location extent between the different combinations of team members. This archetype would thus appear to be the least problematic concerning subgroup formation, given that all team members have the same opportunities to interact face-to-face or virtually.

#### 3.3.2 | Divide to Conquer

In this hybrid team archetype, three members are at the office daily. However, unlike the archetype described above, three of the five members (Alex, Blair, and Casey) are co-located on 2 days, and each of these three is co-located with the remaining two (Dana and Evan) on the other 3 days. Accordingly, Alex, Blair, and Casey are co-located alone as a triad (ABC), and Dana and Evan are co-located (DE), yet always in conjunction with one of the other members. The—still relatively modest—co-location imbalance that is reflected in these differences in co-location extent between the ABC triad and the DE dyad would suggest that there is a risk of these forming a subgroup.

#### 3.3.3 | Power Dyad

In this hybrid team archetype, Casey, Dana, and Evan never share the same office days, while Alex and Blair are co-located on all five weekdays. This could be seen, for example, in a customer support team that always has the same two people at the store, while the remaining three rotate between work at the store and



**FIGURE 2** | Exemplary hybrid teamwork archetypes at a 60% team co-location ratio. Note: M=Monday, Tu=Tuesday, W=Wednesday, Th=Thursday, F=Friday. A, B, C, D, E=Exemplary team members. Scenario 1: Each member has to be in the office for (any) three work days a week. Scenario 2: (Any) three team members need to be in the office on each of the five work days.

remotely in non-equivalent ways (Evan is only at the store 1 day a week, whereas Casey and Dana are there for 2 days a week). Therefore, even though the overall differences in co-location extent are moderate compared to the previous archetype, the two store members exhibit a substantially higher co-location extent than any other combination of team members. This reflects a moderate degree of co-location imbalance, and the power dyad (i.e., Alex and Blair) would likely form a strong subgroup.

### 3.3.4 | Us Versus Them

In this hybrid team archetype, Alex, Blair, and Casey are at the office every single workday, while Dana and Evan work fully remotely (i.e., on all workdays). Here, three team members interact face-to-face daily, whereas the other two work remotely, maintaining a constant count of three on-site employees. An example could be a customer support team at a retail store. In this team, some team members are always physically present, while two others handle digital channels for customer interaction remotely. In this archetype, there is a substantial co-location imbalance, with the emergence of a very clear co-located subgroup (i.e., maximal co-location extent) and two isolated remote members (i.e., minimal co-location extent). Accordingly, there is a high risk of subgroup formation for the co-located triad (i.e., Alex, Blair, and Casey).

## 3.4 | Co-Location Imbalance and Subgroup Formation

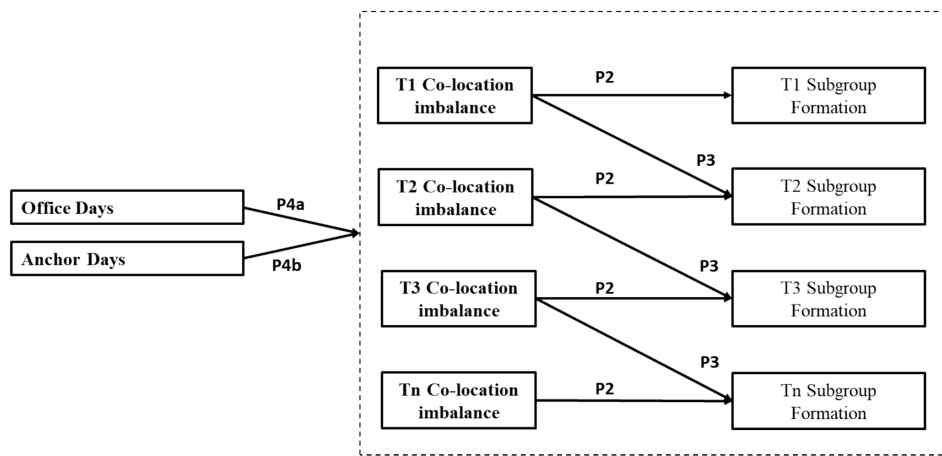
As illustrated in the four exemplary archetypes, co-location imbalance captures structural stability versus fragmentation

within the team. Specifically, co-location imbalance impacts how individuals perceive the relational structure of the group, thereby introducing perceived faultlines that have the potential to break the group up into subgroups (see Maltarich et al. 2021). Co-location imbalance can thus be seen as a relevant structural force behind subgroup formation. Accordingly, and as depicted in Figure 3, we propose that with an increased imbalance in co-location between the different possible combinations of team members comes a higher likelihood of subgroup formation:

P2. *The higher the team's co-location imbalance, the higher the likelihood of subgroup formation.*

## 4 | Reconfiguring: Temporal Dynamics in Imbalance and Subgroup Formation

In the preceding section, we described co-location imbalance as a structural force driving subgroup formation. However, it is important to note that archetypes do not necessarily refer to different teams but can also describe states of the same team at different points in time. Specifically, teams can alternate between different geographic configurations depending on various organizational, team, or individual factors. As a result, co-location imbalance can be considered as a state that can change over time. According to Ilgen et al.'s (2005) input-mediator-output-input (IMOI) model, team effectiveness functions through causal feedback loops, in which outcomes from previous team performance episodes become inputs for future team processes and emergent states. Building on this, we propose that within hybrid teams in any given week, the impact of a team's current co-location imbalance on the likelihood of subgroup formation



**FIGURE 3** | Nomological network depicting and temporal dynamics and antecedents of subgroup formation. Note: The dashed box represents the temporal dynamics in the relationship between co-location imbalance and subgroup formation, showing that prior levels of co-location imbalance also influence the relationship between the two.

is contingent on the team's prior levels of co-location imbalance (see Figure 3).

Suppose there is little change in the team's geographic configuration (and thus co-location imbalance). In that case, existing ties are typically reinforced and will likely lead to subgroup formation similar to what can be found in stable, partially distributed teams. However, because hybrid team members are not bound to geographic locations like virtual team members are, a hybrid team could manifest the same archetype over subsequent weeks. Yet, the member composition of the archetype could vary over time.

If we consider the Us versus Them archetype, there would typically be a strong likelihood of subgroup formation for the ABC triad, as these members are always co-located. However, if we now imagine that this hybrid team is still in the same configuration the following week, but now Blair and Casey work remotely while Dana and Evan work in the office, this would weaken the strong ABC subgroup, as Alex is now colocated with Dana and Evan. This demonstrates that it is not simply which archetype is manifested by a hybrid team, but also which members a configuration is composed of. Accordingly, the impact of co-location imbalance on subgroup formation depends on the compositional stability of member configurations. Specifically, the higher the compositional stability—meaning that the same members occupy the same position in the relational structure of the team—the more this will reinforce emerging subgroups. We thus propose that

**P3.** *Stability in the composition of member configurations increases the positive effect of co-location imbalance on subgroup formation over time.*

## 5 | Organizational Antecedents of Co-Location Imbalance

If high co-location imbalance is likely to produce subgroups in hybrid teams—with detrimental effects on their processes and performance—why would it emerge, and what could we do to avoid it? In the following, we outline organizational antecedents of team

co-location imbalance. Specifically, we consider factors that constrain team members' office attendance patterns and, as a result, influence hybrid team configurations. We note that this is not an exhaustive taxonomy. Still, we offer these factors to spur initial research into the antecedents of hybrid team co-location configurations and their concomitant co-location imbalance.

We focus on two structural constraints that are typically grounded in organizational telecommuting policies and/or arrangements between team members and their managers: (1) number of office days and (2) "Anchor days," that is, specific days where all team members must be present (see e.g., Bloom 2023; Trevor and Holweg 2022). These represent standard organizational mandates constraining employees' choices regarding whether and when to work on-site or remotely. It is important to note that our model assumes a moderate degree of task interdependence. Highly interdependent tasks demand significant coordination, which is often more effortful in virtual settings (see Handke et al. 2020). Therefore, our model is focused on teams where interdependence is moderate; team members require coordination but also have tasks they can work on individually (e.g., knowledge worker teams). As explained further in our discussion, future research should further explore the effects of varying levels of task interdependence.

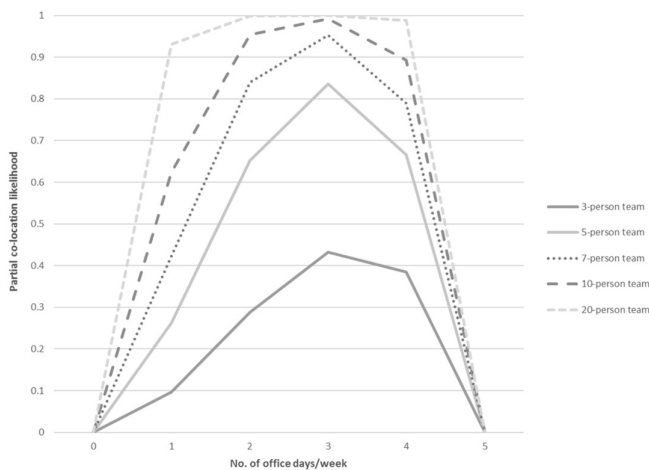
### 5.1 | Number of Office Days

As discussed earlier, many organizations mandate a minimum number of days employees are expected to be at the office. The number of days employees work at the office influences a team's co-location imbalance through the constraints it puts on the number of possible configurations that arise through team members' office attendance patterns. Specifically, the number of possible configurations depends on (a) the number of possible office attendance patterns per team member across the week and (b) the alignment of these individual office attendance patterns at the team level.

First, office days directly impact the number of office attendance patterns for individual employees, such that there are

$n!/(k!(n-k)!)$  possible combinations of office days per individual, with “ $n$ ” being the number of work days per week (i.e., 5) and “ $k$ ” being the number of days spent at the office. For instance, the possible combinations if employees were to work at the office for only 1 day a week is  $5!/(1!(5-1)!)=5$  (i.e., an employee may work at the office on Monday, Tuesday, Wednesday, Thursday, or Friday). However, for two office days a week, there are already twice as many different office attendance patterns per individual across the week:  $5!/(2!(5-2)!)=10$ . The same is true for three office days a week ( $5!/(3!(5-3)!)=10$ ), while the number goes down again at four office days a week (reflecting the same number of possible patterns as for one office day a week). And clearly, there is only one possible attendance pattern for employees who work either fully on-site or remotely.

Second, to obtain the number of possible team-level configurations, the number of possible individual office attendance patterns is raised to the power of the number of team members. For instance, given one office day a week,<sup>4</sup> there are  $5^3=125$  possible configurations in a three-person team, that is, combinations of individual team members’ office attendance patterns at the team level. Assuming two office days a week, there are already  $10^3=1000$  possible configurations per week. However, the higher the number of overall possible configurations, the higher also the number of configurations where only a portion of the team (instead of all or no members) is co-located. Figure 4 illustrates the relationship between the number of office days and the likelihood of partial co-location (i.e., only some team members working in co-location), which reflects an inverted U-shape, with the highest imbalance occurring at three office days per week.<sup>5P4a</sup> *There is a higher risk for subgroup formation at a moderate number of office days than at a higher or lower number of office days because—on average—a moderate number of office days leads to higher co-location imbalance.*



**FIGURE 4** | Likelihood of partial team co-location as a function of office days and team size. Note: The figure shows the likelihood of partial co-location (i.e., a minimum of two co-located team members and a maximum of all but one co-located team members) as a function of office days for 3, 5, 7, 10, and 20-person teams. Partial co-location likelihood is calculated by adding the likelihood of all possible subgroup combinations for a given number of office days.

## 5.2 | Anchor Days

A commonly discussed practice to constrain the uncertainty for teams and their managers imposed by idiosyncratic hybrid work practices is “anchor days” (Baird 2021; Bloom 2023; Colla 2022; Trevor and Holweg 2022). Anchor days reflect specific days where a group of employees (in the same organization, department, or team) commit to coming into the office simultaneously, which can be imposed through organizational policies or at managerial discretion. Many organizations and/or managers define specific days where all team members should be at the office together to have team strategic meetings, build relationships, and preserve organizational culture. For example, in 2024, Starbucks<sup>6</sup> required its corporate employees to work on-site 3 days per week (number of office days), as well as to work on-site on Tuesdays (anchor day).

Anchor days naturally constrain the number of office days. For example, Canon<sup>6</sup> required most of its corporate employees to be in the office on Tuesdays and Wednesdays in 2024 but did not specify minimum office days. The minimum number of office days at Canon was thus 2 out of 5 days, but employees could work at the office more than that. Thus, although the minimum office days and anchor days are partially dependent on each other, they are not identical. Both influence the likelihood of (full) team member co-location and, thus, co-location imbalance. However, as opposed to the number of office days, full team member co-location is no longer subject to chance but will be a given. Specifically, the more anchor days, the more the team will be fully co-located, thus lowering its co-location imbalance. Therefore, we propose that

P4b. *There is a lower risk for subgroup formation at a higher number of anchor days because—on average—more anchor days lead to lower co-location imbalance.*

## 6 | Discussion

Existing team research has primarily focused on teams where members work at the same location (fully co-located), at two or more sites (partially distributed), or entirely remotely (for reviews, see Gilson et al. 2015; Raghuram et al. 2019). However, these scenarios fall short in capturing the inherent complexities of contemporary hybrid teams with members working both on-site and remotely, even when they have a shared office space, and who frequently switch between these modalities for varying durations (e.g., a team member working 2 days in the office and 3 days working from home and another one working 1 day in the office and 4 days from home). In this paper, we develop a conceptual framework that accounts for the complexities of individuals’ office attendance patterns and their consequences for hybrid teamwork. We focus on team geographic configuration (defined by co-location imbalance) and the formation of subgroups within hybrid teams. This approach allows us to comprehensively explore the complexities of hybrid teamwork, its temporal dynamics, and its consequences. By investigating these unique hybrid team dynamics and their implications, our conceptual framework advances research in several ways. Below, we highlight the theoretical contributions, future research directions, and practical implications of this work.

## 6.1 | Theoretical Contributions

### 6.1.1 | A Dynamic Perspective on Team Geographic Configuration

Prior research has generally considered team geographic configuration to negatively impact team functioning through the formation of geographic subgroups (Cramton and Hinds 2005; O'Leary and Mortensen 2010; Polzer et al. 2006). This paper expands existing team research by considering the dynamics of team geographic configuration and subgroup formation, which emerge as team members individually alternate between co-located and remote work. Adopting a configurational perspective, we introduce the concept of co-location imbalance, defined as the disparity in co-location between different combinations of team members, to capture the structural forces that drive subgroup formation in hybrid teams. This novel lens allows for a more thorough exploration of the unique structural properties and dynamics of hybrid teams.

Specifically, the inherent assumption of temporally stable geographic subgroups that underlies prior research (e.g., O'Leary and Mortensen 2010; Polzer et al. 2006) is unlikely to hold in hybrid teams, given the day-to-day variability in employees' preferred work locations. Consequently, our conceptual framework represents the first attempt to theorize and capture the temporal dynamics of subgroup formation within hybrid teams. We not only theorize about the immediate impact of co-location imbalance on subgroup formation but also explore how changes in co-location imbalance influence subgroup formation in subsequent episodes. By emphasizing these temporal dynamics, we highlight the urgent need to focus on how team members' office attendance patterns play together and how this can change over time.

### 6.1.2 | Organizational Antecedents of Team Geographic Configuration

Our conceptual framework also emphasizes the importance of examining organizational antecedents contributing to hybrid teams' geographic configuration. Specifically, we focus on the organizational factors that constrain team members' office attendance patterns and, therefore, influence team geographic configuration (i.e., co-location imbalance). We integrate insights from the telecommuting literature regarding individual and organizational constraints with knowledge of team geographic configuration and subgroup formation. In addressing these aspects, we respond to recent calls (Handke et al. 2020, 2024; Raghuram et al. 2019) for a more integrated understanding of virtual and hybrid work and teams, bridging the gap between the two domains.

## 6.2 | Future Research Directions

Based on the conceptual work presented in this paper, we identify several avenues for future investigation that scholars should explore for a profounder understanding of hybrid teams. We encourage future research to examine antecedents

of co-location imbalance at multiple levels, as well as to consider temporal, technological, and compositional factors that interact with co-location imbalance and its impact on subgroup formation.

### 6.2.1 | Multilevel Antecedents of Co-Location Imbalance

In addition to organizational antecedents of co-location imbalance, we believe that there could also be several noteworthy predictors of co-location imbalance at the team/task or individual level. At the team level, this could include task requirements necessitating physical presence at the office (e.g., because of specific equipment or in-person interactions). For instance, a research and development team may need to conduct some of their tasks in the lab, and teams in the design department may construct complex models that require a computational capacity that their laptop computers cannot meet. Hybrid teams like these may need one or more members on-site to access these tools. Accordingly, these presence requirements can increase co-location imbalance because while they require *some* team members to be on-site to perform a task, they typically do not need *all* team members to be on-site together (see also Scenario 2 in the section on hybrid team archetypes). At the individual level, team members' social preferences (i.e., friendship/liking between certain team members) may be a decisive factor for some team members' co-location (i.e., individuals will be more likely to go to the office if people they like are also there)—yet not others—thereby promoting co-location imbalance.

Moreover, antecedents at different levels may also interact in their effect on co-location imbalance. For instance, a moderate number of office days (organizational level) could have even more harmful effects when considering team members' agency in choosing which days to come in, based on, for example, their social preferences (individual level). For instance, Charpignon et al. (2023) clearly showed that hybrid workers based their own office attendance on others' office attendance. Conversely, individuals' preferences (individual level) will have less impact when restrained by, for example, anchor days (organizational level) or presence requirements (team/task level). Moreover, it is important to consider that team members' agency is not only restricted by organizational or team/task-level factors but also by individual-level constraints, such as family obligations or means of transportation. Future research should thus consider the interplay of these (and further) antecedent factors and consider the degree of team members' agency in their office attendance at different levels. Methodologically, extending the diary study designs, which have previously been used in telecommuting research to account for the differential effects of remote versus office-based work as telecommuters alternate between these two locations (e.g., Anderson, Kaplan, and Vega 2015; Delanoeije, Verbruggen, and Germeyns 2019; Delanoeije and Verbruggen 2020), to the team level would allow researchers to capture antecedent and moderating factors at various levels and relate this to the alignment of team members' work location and resulting team processes, states, and outcomes.

### 6.2.2 | Temporal Factors

Our conceptual framework provides a basis for conducting longitudinal studies that can offer valuable insights into the dynamic nature of hybrid teams, facilitating a deeper exploration of the factors that influence subgroup formation. In terms of temporal factors, the link between co-location imbalance and subgroup formation may change over the life cycle of a team, with the team being more able to cope with imbalance at later stages of team development. For instance, experience in working with one another can enable team members to overcome barriers in relationship building and task performance even at a distance (e.g., Carlson and Zmud 1999; van der Kleij et al. 2009; Walther 1992), thus weakening the relationship between co-location imbalance and subgroup formation.

Moreover, it could be interesting to look at the impact of changes in the co-location extent between team members. For instance, a change from no co-location to one co-located day may have a stronger impact on the relationship between team members than an increase from three to four co-located days. Whereas in the first situation adding a co-located day qualitatively changes the potential for interpersonal exchanges, in the latter scenario, it is unlikely that an additional co-located day will greatly impact the established relationship developed through the previous three co-located days. Furthermore, stipulations on the number of office or anchor days may not apply to all teams and not all the time. For the sake of clarity, we illustrated co-location imbalance based on a fixed number of days per week/fixed number of members per day, but naturally, organizations will show variation in office days, leading to an even higher number of possible configurations that could be interesting (but also very complex) to explore. Generally, research in this area would need to go beyond simple cross-sectional designs. Capturing what is happening with hybrid teams at any one point in time is less illuminating than measuring how their configurations change over time and, thus, will require longitudinal or time-series designs.

### 6.2.3 | Socio-Technical Factors

How technologies are used in teams' communicative practices can also influence the relationship between co-location imbalance and subgroup formation. From a socio-material perspective, a technology's affordance (i.e., its functional and relational aspects that determine the user's possibilities for action; Evans et al. 2017) depends on the way people use it to meet their own goals and desires (e.g., Leonardi 2012; Orlikowski 1992). This means that team members may use technologies in very different ways and with very different (intended or unintended) outcomes, which can (but does not have to) be beneficial in counteracting co-location imbalance. For example, the effects of co-location imbalance on subgroup formation would be lower when team members use technology to mitigate the social distance between members at different locations (for example, sharing social information via instant messaging software). However, technology could also increase the gap between co-located and remote individuals because some information could, for instance, only be shared among the ones working remotely. Conversely, just because members are co-located does not mean they necessarily engage in effective face-to-face communication (even though it

is more likely) and the quality of co-location interactions will play an important role alongside team members' technology use.

As such, gaining closer insights into the specific communication practices enacted in hybrid teams could enable a more nuanced understanding of the relationship between co-location imbalance and subgroup formation. Research in this area could involve assessing metadata of the communications between team members to assess who communicates with whom and how this differs depending on the team's co-location configuration. Finally, exploring the complex role of diverse communication technologies was outside the scope of this paper. From the use of MS Teams to virtual meetings in a virtual reality environment, there is potentially another stream of research that will feed into our understanding of hybrid teams.

### 6.2.4 | Compositional Factors

Regarding compositional factors, future research should move beyond the exclusive focus on geographic subgroups and consider how they interact with other types of subgroups. In terms of further identity-based subgroups, there is a possibility of subgroup divisions or 'faultlines' being exacerbated through demographic characteristics shared by members who are co-located more frequently than others. Moreover, subgroups emerge not only on the basis of identity (as in the case of, e.g., location or demographics) but also based on resources and knowledge (Carton and Cummings 2012). In fact, knowledge-based subgroups could even bridge the gap between members at different locations if co-located and remote members need access to each other's knowledge to perform their work, thereby mitigating the risk of subgroup formation. Therefore, it is crucial to investigate how team composition, including demographic or informational diversity, may moderate the impact of co-location imbalance. This aspect deserves further attention and should be discussed in future studies to understand the complex dynamics within hybrid teams comprehensively. Research in this area could examine configurations of team composition through tools like fuzzy set Qualitative Comparative Analysis (fsQCA). Such tools would allow team researchers to determine whether multiple composition factors combine to produce stronger subgroups.

## 6.3 | Practical Implications

The practical implications of our work revolve around optimizing both the nature and effects of teams' office attendance patterns. First, acknowledging the importance of strategic organizational interventions is crucial when certain team members are more likely to be co-located than others. In such cases, the question should be how to incentivize and structure office days to maximize the benefits of co-location. Practical strategies may involve scheduling significant tasks, such as meetings, on office days and organizing shared meals and other social activities to promote team cohesion. Our conceptual framework specifically challenges the oversimplified guideline of "three days in the office, two days out." Adhering to this pattern without careful consideration may unintentionally exacerbate subgroup formation. This is particularly relevant given that most hybrid work policies appear to be based on minimum office days (rather than specific

anchor days). For instance, of the 1275 US companies listed in the Flex Index at the beginning of 2024 (covering information on workplace flexibility for over 8000 companies worldwide) with minimum office day requirements, 51% mandated at least 3 days at the office. Our practical implications, which show that these types of arrangements are particularly prone to subgroup formation, thus underscore the necessity of thoughtful deliberation in designing and implementing hybrid work arrangements. For instance, Charpignon et al. (2023) suggest that companies following the “come in in any 3 days per week” rule should attempt to promote coordination attempts at the team level (i.e., team-level synchronization of in-office days).

Second, however, optimizing teams’ office attendance patterns could also apply to cases in which organizations may actually benefit from subgroup formation. For example, organizations that put together taskforces (i.e., task-based subgroups, see Carton and Cummings 2012) to deal with time-sensitive issues may profit from strengthening the relationship between members of that taskforce through aligning their office schedules. In this case, the effect of subgroup formation would be exacerbated because team members would be tied to one another through both high task interdependence and co-location. However, this could ensure that members of this taskforce are quicker at developing the shared mental models that are necessary to effectively and efficiently coordinate their actions at later stages of task execution (see Handke et al. 2019). Accordingly, promoting geographic subgroups could even be functional in some cases, and altering either the number of office or anchor days to promote co-location of this subset of team members may represent a fruitful endeavor.

Managers and team leaders can have a significant role in this process. They are knowledgeable about whether, how, and which specific subgroups can be useful for the team in a given performance episode, and should be attentive to detrimental interaction patterns which may threaten the team as a whole. Upon recognizing negative effects of subgroup formation, leaders may promote a space for the entire team to reflect upon this process and engage in sensemaking processes (Morgeson, DeRue, and Karam 2010). Interpreting disruptive events, or patterns, and feeding this interpretation to the team helps team members create a common understanding of how to deal with the impact of the co-location imbalance at a given time.

Third, another potential implication for teams and team managers entails the leverage of technology and, more specifically, of AI, to detect predictors of subgroup formation over time. These applications can provide useful information to team members and managers when fed information about “who is at the office when,” and computing the relational strength between team members. When realizing that a given dyad or subgroup is becoming stronger over time, this can signal the need to reflect about potential consequences of that subgroup for task and team-related outcomes.

## 7 | Conclusion

In conclusion, this paper marks a significant step forward in understanding hybrid teamwork through considering the

temporal dynamics of team geographic configuration. We integrate individual- and team-level perspectives on hybrid work by illuminating how individual team members’ office attendance influences the relational structure of a team, laying the groundwork for a more holistic analysis of hybrid work as a multilevel phenomenon. Specifically, we show that the interplay of team members’ office attendance patterns can provoke subgroup formation through team co-location imbalance, thereby shedding light on potentially adverse effects of hybrid work on team functioning. Our nomological network surrounding co-location imbalance not only provides a theoretical foundation for future research but also offers practical implications for organizations striving to optimize their hybrid work arrangements. By identifying key antecedents and temporal dynamics related to co-location imbalance, our work opens up avenues for empirical investigation and the development of strategies to effectively manage hybrid teams.

## Conflicts of Interest

The authors declare no conflicts of interest.

## Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

## Endnotes

<sup>1</sup> As opposed to the literature on virtual/partially distributed teams, where temporal dispersion captures the degree to which team members work hours overlap (e.g., O’Leary and Cummings 2007) for teams that span different time zones, we mean temporal dispersion in the sense that team members work at the same site (i.e., the office) at different times (i.e., week days).

<sup>2</sup> A substantial body of management research has used the logic of fuzzy sets through fuzzy set Qualitative Comparative Analysis (fsQCA; Fiss 2007). Although to date it has primarily been used in strategy research, fuzzy set logic has recently begun to be used in organizational behavior research as well (e.g., Frazier, Tupper, and Fainshmidt 2016; Ong and Johnson 2023; Yong, Mannucci, and Lander 2020).

<sup>3</sup> Co-location extent could be measured on any given numeric scale, for the purpose of this manuscript, we will employ a scale of 0 to 5, symbolizing number of days in a 5-day work week in which team members could potentially work in co-location.

<sup>4</sup> For the sake of simplicity, our examples assume that all team members show the same number of office days per week. However, the number of office days per week may be differentially spread among team members, which would simply mean that the formulas above would be applied directly at the team level, with “*n*” being the number of team members  $\times$  5 (work days/week), and “*k*” being the number of team members  $\times$  the number of office days at the team level.

<sup>5</sup> Partial co-location likelihood is calculated by adding the likelihood of all possible subgroup combinations for a given number of office days. In a team with five members, the likelihood of a specific co-located subgroup forming at the office on a given day is  $((o/5) * (o/5) * (r/5) * (r/5) * (r/5))$ , with “*o*” being the number of office days and “*r*” being the number of remote days (i.e., 5—office days).

<sup>6</sup> These examples are drawn from the Flex Report and depict the status quo in Q1 2024. They can thus be subject to change. The current version of the Flex Report can be accessed here: <https://www.flex.scoopforwork.com/>.

## References

- Aksoy, C., J. M. Barrero, N. Bloom, S. J. Davis, M. Dolls, and P. Zarate. 2023. *Working From Home Around the Globe: 2023 Report*. WFH Research. [https://wfhresearch.com/wp-content/uploads/2024/03/Global-Working-from-Home-2023\\_updated.pdf](https://wfhresearch.com/wp-content/uploads/2024/03/Global-Working-from-Home-2023_updated.pdf).
- Allen, T. D., T. D. Golden, and K. M. Shockley. 2015. "How Effective Is Telecommuting? Assessing the Status of our Scientific Findings." *Psychological Science in the Public Interest* 16, no. 2: 40–68. <https://doi.org/10.1177/1529100615593273>.
- Allen, T. J. 1984. *Managing the Flow of Technology*. MIT Press.
- Anderson, A. J., S. A. Kaplan, and R. P. Vega. 2015. "The Impact of Telework on Emotional Experience: When, and for Whom, Does Telework Improve Daily Affective Well-Being?" *European Journal of Work and Organizational Psychology* 24, no. 6: 882–897. <https://doi.org/10.1080/1359432X.2014.966086>.
- Armstrong, D. J., and P. Cole. 2002. "Managing Distances and Differences in Geographically Distributed Work Groups." In *Distributed Work*, edited by P. Hinds and S. Kiesler, 167–189. Boston Review. <https://doi.org/10.7551/mitpress/2464.003.0012>.
- Baird, L. 2021. "'Anchor Days' Key to Return of Lively Office Culture, Say BHP, IAG Executives." *Australian Financial Review*, December 6. <https://www.afr.com/work-and-careers/workplace/executives-hope-anchor-days-will-revive-office-culture-20211206-p59f7h>.
- Bell, B. S., K. L. McAlpine, and N. S. Hill. 2019. "Leading From a Distance: Advancements in Virtual Leadership Research." In *The Cambridge Handbook of Technology and Employee Behavior*, 387–418. Cambridge University Press. <https://doi.org/10.1017/9781108649636.016>.
- Bell, B. S., K. L. McAlpine, and N. S. Hill. 2023. "Leading Virtually." *Annual Review of Organizational Psychology and Organizational Behavior* 10, no. 1: 339–362. <https://doi.org/10.1146/annurev-orgpsych-120920-050115>.
- Bennett, A. A., E. D. Champion, K. R. Keeler, and S. K. Keener. 2021. "Videoconference Fatigue? Exploring Changes in Fatigue After Videoconference Meetings During COVID-19." *Journal of Applied Psychology* 106, no. 3: 330–344. <https://doi.org/10.1037/apl0000906>.
- Blanchard, A. L., and J. A. Allen. 2023. "The Entitativity Underlying Meetings: Meetings as Key in the Lifecycle of Effective Workgroups." *Organizational Psychology Review* 13, no. 4: 458–477. <https://doi.org/10.1177/20413866221101341>.
- Bloom, N. 2023. "Research: Where Managers and Employees Disagree About Remote Work." *Harvard Business Review*, January 5. <https://hbr.org/2023/01/research-where-managers-and-employees-disagree-about-remote-work>.
- Buffer. 2023. "State of Remote Work 2023." <https://buffer.com/state-of-remote-work/2023>.
- Carlson, J. R., and R. W. Zmud. 1999. "Channel Expansion Theory and the Experiential Nature of Media Richness Perceptions." *Academy of Management Journal* 42, no. 2: 153–170. <https://doi.org/10.5465/257090>.
- Carton, A. M., and J. N. Cummings. 2012. "A Theory of Subgroups in Work Teams." *Academy of Management Review* 37, no. 3: 441–470. <https://doi.org/10.5465/amr.2009.0322>.
- Carton, A. M., and J. N. Cummings. 2013. "The Impact of Subgroup Type and Subgroup Configurational Properties on Work Team Performance." *Journal of Applied Psychology* 98, no. 5: 732–758. <https://doi.org/10.1037/a0033593>.
- Charpignon, M. L., Y. Yuan, D. Zhang, et al. 2023. "Navigating the new Normal: Examining Coattendance in a Hybrid Work Environment." *Proceedings of the National Academy of Sciences* 120, no. 51: e2310431120. <https://doi.org/10.1073/pnas.2310431120>.
- Cheng, Z. C., and T. C. Guo. 2015. "The Formation of Social Identity and Self-Identity Based on Knowledge Contribution in Virtual Communities: An Inductive Route Model." *Computers in Human Behavior* 43: 229–241. <https://doi.org/10.1016/j.chb.2014.10.056>.
- Colla, N. T. 2022. *Take Advantage of in-Office 'Anchor Days' to Strengthen Relationships and Build Skills*. Globe and Mail. <https://www.theglobeandmail.com/business/careers/management/article-in-office-anchor-days-wont-work-without-a-reason-and-plan-for-what/>.
- Collins, A. M., D. Hislop, and S. Cartwright. 2016. "Social Support in the Workplace Between Teleworkers, Office-Based Colleagues and Supervisors." *New Technology, Work and Employment* 31, no. 2: 161–175. <https://doi.org/10.1111/ntwe.12065>.
- Cousins, K., D. Robey, and I. Zigers. 2007. "Managing Strategic Contradictions in Hybrid Teams." *European Journal of Information Systems* 16, no. 4: 460–478. <https://doi.org/10.1057/palgrave.ejis.3000692>.
- Cramton, C. D. 2001. "The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration." *Organization Science* 12, no. 3: 346–371. <https://doi.org/10.1287/orsc.12.3.346.10098>.
- Cramton, C. D. 2002. "Attribution in Distributed Work Groups." In *Distributed Work*, edited by P. Hinds and S. Kiesler, 191–212. Boston Review. MIT Press. <https://doi.org/10.7551/mitpress/2464.003.0014>.
- Cramton, C. D., and P. J. Hinds. 2005. "Subgroup Dynamics in Internationally Distributed Teams: Ethnocentrism or Cross-National Learning?" *Research in Organizational Behavior* 26: 231–263. [https://doi.org/10.1016/S0191-3085\(04\)26006-3](https://doi.org/10.1016/S0191-3085(04)26006-3).
- Cramton, C. D., K. L. Orvis, and J. M. Wilson. 2007. "Situation Invisibility and Attribution in Distributed Collaborations." *Journal of Management* 33, no. 4: 525–546. <https://doi.org/10.1177/0149206307302549>.
- Delanoeije, J., and M. Verbruggen. 2020. "Between-Person and Within-Person Effects of Telework: A Quasi-Field Experiment." *European Journal of Work and Organizational Psychology* 29, no. 6: 795–808. <https://doi.org/10.1080/1359432X.2020.1774557>.
- Delanoeije, J., M. Verbruggen, and L. Germeys. 2019. "Boundary Role Transitions: A Day-To-Day Approach to Explain the Effects of Home-Based Telework on Work-To-Home Conflict and Home-To-Work Conflict." *Human Relations* 72, no. 12: 1843–1868. <https://doi.org/10.1177/0018726718823071>.
- Dulebohn, J. H., and J. E. Hoch. 2017. "Virtual Teams in Organizations." *Human Resource Management Review* 27, no. 4: 569–574. <https://doi.org/10.1016/j.hrmr.2016.12.004>.
- Emanuel, N., E. Harrington, and A. Pallais. 2023. "The Power of Proximity to Coworkers: Training for Tomorrow or Productivity Today?" Working Paper. Harvard University. Retrieved from <https://scholar.harvard.edu/pallais/publications/power-proximity-coworkers-training-tomorrow-or-productivity-today>.
- Eurofound. 2020. *Telework and ICT-Based Mobile Work: Flexible Working in the Digital Age, New Forms of Employment Series*. Luxembourg: Publications Office of the European Union. <https://www.eurofound.europa.eu/publications/report/2020/telework-and-ict-based-mobile-work-flexible-working-in-the-digital-age>.
- Evans, S. K., K. E. Pearce, J. Vitak, and J. W. Treem. 2017. "Explicating Affordances: A Conceptual Framework for Understanding Affordances in Communication Research." *Journal of Computer-Mediated Communication* 22, no. 1: 35–52. <https://doi.org/10.1111/jcc4.12180>.
- Fayard, A.-L., and J. Weeks. 2007. "Photocopiers and Water-Coolers: The Affordances of Informal Interaction." *Organization Studies* 28, no. 5: 605–634. <https://doi.org/10.1177/0170840606068310>.
- Festinger, L., S. Schachter, and K. Back. 1950. *Social Pressures in Informal Groups; a Study of Human Factors in Housing*. Harper.
- Fiol, C. M., and E. J. O'Connor. 2005. "Identification in Face-To-Face, Hybrid, and Pure Virtual Teams: Untangling the Contradictions."

- Organization Science 16, no. 1: 19–32. <https://doi.org/10.1287/orsc.1040.0101>.
- Fiss, P. C. 2007. “A set-Theoretic Approach to Organizational Configurations.” *Academy of Management Review* 32: 1180–1198.
- Flex Index. 2024. “The Flex Report Q1 2024.” <https://www.flex.scoopforwork.com/stats>.
- Fonner, K. L., and M. E. Roloff. 2010. “Why Teleworkers Are More Satisfied With Their Jobs Than Are Office-Based Workers: When Less Contact Is Beneficial.” *Journal of Applied Communication Research* 38, no. 4: 336–361. <https://doi.org/10.1080/00909882.2010.513998>.
- Frazier, M. L., C. Tupper, and S. Fainshmidt. 2016. “The Path(S) to Employee Trust in Direct Supervisor in Nascent and Established Relationships: A Fuzzy Set Analysis.” *Journal of Organizational Behavior* 37, no. 7: 1023–1043.
- Gajendran, R. S., and D. A. Harrison. 2007. “The Good, the Bad, and the Unknown About Telecommuting: Meta-Analysis of Psychological Mediators and Individual Consequences.” *Journal of Applied Psychology* 92, no. 6: 1524–1541. <https://doi.org/10.1037/0021-9010.92.6.1524>.
- Gibson, C. B., L. L. Gilson, T. L. Griffith, and T. A. O'Neill. 2023. “Should Employees be Required to Return to the Office?” *Organizational Dynamics* 52, no. 2: 100981. <https://doi.org/10.1016/j.orgdyn.2023.100981>.
- Gilson, L. L., P. Costa, T. A. O'Neill, and M. T. Maynard. 2021. “Putting the ‘TEAM’ Back Into Virtual Teams.” *Organizational Dynamics* 50, no. 1: 100847. <https://doi.org/10.1016/j.orgdyn.2021.100847>.
- Gilson, L. L., M. T. Maynard, N. C. Jones Young, M. Vartiainen, and M. Hakonen. 2015. “Virtual Teams Research: 10 Years, 10 Themes, and 10 Opportunities.” *Journal of Management* 41, no. 5: 1313–1337. <https://doi.org/10.1177/0149206314559946>.
- Golden, T. 2007. “Co-Workers Who Telework and the Impact on Those in the Office: Understanding the Implications of Virtual Work for Co-Worker Satisfaction and Turnover Intentions.” *Human Relations* 60, no. 11: 1641–1667. <https://doi.org/10.1177/0018726707084303>.
- Gratton, L. 2020. “Four Principles to Ensure Hybrid Work Is Productive Work.” *MIT Sloan Management Review*. <https://sloanreview.mit.edu/article/four-principles-to-ensure-hybrid-work-is-productive-work/>.
- Gratton, L. 2021. “How to Do Hybrid Right.” *Harvard Business Review*. <https://hbr.org/2021/05/how-to-do-hybrid-right>.
- Griffith, T. L., and M. A. Neale. 2001. “8. Information Processing in Traditional, Hybrid, and Virtual Teams: From Nascent Knowledge to Transactive Memory.” *Research in Organizational Behavior* 23: 379–421. [https://doi.org/10.1016/S0191-3085\(01\)23009-3](https://doi.org/10.1016/S0191-3085(01)23009-3).
- Grzegorzczak, M., M. Mariniello, L. Nurski, and T. Schraepen. 2021. *Blending the Physical and Virtual: A Hybrid Model for the Future of Work (Policy Contribution 14/2021)*. Bruegel. <https://www.bruegel.org/policy-brief/blending-physical-and-virtual-hybrid-model-future-work>.
- Hackman, J. R., and C. G. Morris. 1975. “Group Tasks, Group Interaction Process, and Group Performance Effectiveness: A Review and Proposed Integration.” *Advances in Experimental Social Psychology* 8: 45–99. [https://doi.org/10.1016/S0065-2601\(08\)60248-8](https://doi.org/10.1016/S0065-2601(08)60248-8).
- Handke, L., A. Aldana, P. L. Costa, and T. A. O'Neill. 2024. “Hybrid Teamwork: What We Know and Where We Can Go From Here.” *Small Group Research* 55, no. 5: 805–835. <https://doi.org/10.1177/10464964241279078>.
- Handke, L., F. E. Klonek, S. K. Parker, and S. Kauffeld. 2020. “Interactive Effects of Team Virtuality and Work Design on Team Functioning.” *Small Group Research* 51, no. 1: 3–47. <https://doi.org/10.1177/1046496419863490>.
- Handke, L., E.-M. Schulte, K. Schneider, and S. Kauffeld. 2019. “Teams, Time, and Technology: Variations of Media Use Over Project Phases.” *Small Group Research* 50, no. 2: 266–305. <https://doi.org/10.1177/1046496418824151>.
- Hilberath, C., J. Kilmann, D. Lovich, et al. 2020. *Hybrid Work Is the New Remote Work*. Boston Consulting Group. <https://www.bcg.com/publications/2020/managing-remote-work-and-optimizing-hybrid-working-models>.
- Hinds, P. J., and M. Mortensen. 2005. “Understanding Conflict in Geographically Distributed Teams: The Moderating Effects of Shared Identity, Shared Context, and Spontaneous Communication.” *Organization Science* 16, no. 3: 290–307. <https://doi.org/10.1287/orsc.1050.0122>.
- Hogg, M. A., and J. C. Turner. 1985. “Interpersonal Attraction, Social Identification and Psychological Group Formation.” *European Journal of Social Psychology* 15, no. 1: 51–66. <https://doi.org/10.1002/ejsp.2420150105>.
- Ilgen, D. R., J. R. Hollenbeck, M. Johnson, and D. Jundt. 2005. “Teams in Organizations: From Input-Process-Output Models to IMOI Models.” *Annual Review of Psychology* 56: 517–543. <https://doi.org/10.1146/annurev.psych.56.091103.070250>.
- Jong, J., H. Whitehouse, C. Kavanagh, and J. Lane. 2015. “Shared Negative Experiences Lead to Identity Fusion via Personal Reflection.” *PLoS ONE* 10, no. 12: e0145611. <https://doi.org/10.1371/journal.pone.0145611>.
- Kiesler, S., and J. N. Cummings. 2002. “What Do We Know About Proximity and Distance in Work Groups? A Legacy of Research.” In *Distributed Work*, edited by P. Hinds and S. Kiesler, 57–80. Boston Review.
- Klitmøller, A., S. C. Schneider, and K. Jonsen. 2015. “Speaking of Global Virtual Teams: Language Differences, Social Categorization and Media Choice.” *Personnel Review* 44, no. 2: 270–285. <https://doi.org/10.1108/PR-11-2013-0205>.
- Kniffin, K. M., J. Narayanan, F. Anseel, et al. 2021. “COVID-19 and the Workplace: Implications, Issues, and Insights for Future Research and Action.” *American Psychologist* 76, no. 1: 63–77. <https://doi.org/10.1037/amp0000716>.
- Kraut, R. E., R. Fish, R. Root, and B. Chalfonte. 1990. “Informal Communication in Organizations: Form, Function, and Technology.” In *Human Reactions to Technology: Claremont Symposium on Applied Social Psychology*, edited by S. Oskamp and S. Spacapan, 145–199. Sage.
- Lau, D. C., and J. K. Murnighan. 1998. “Demographic Diversity and Faultlines: The Compositional Dynamics of Organizational Groups.” *Academy of Management Review* 23, no. 2: 325–340. <https://doi.org/10.5465/amr.1998.533229>.
- Lau, D. C., and J. K. Murnighan. 2005. “Interactions Within Groups and Subgroups: The Effects of Demographic Faultlines.” *Academy of Management Journal* 48, no. 4: 645–659. <https://doi.org/10.5465/amj.2005.17843943>.
- Leonardi, P. M. 2012. “Materiality, Sociomateriality, and Socio-Technical Systems: What Do These Terms Mean? How Are They Different? Do We Need Them?” In *Materiality and Organizing*, edited by P. M. Leonardi, B. A. Nardi, and J. Kallinikos, 1st ed., 24–48. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199664054.003.0002>.
- Li, S. 1989. “Measuring the Fuzziness of Human Thoughts: An Application of Fuzzy Sets to Sociological Research.” *Journal of Mathematical Sociology* 14, no. 1: 67–84. <https://doi.org/10.1080/0022250X.1989.9990044>.
- Maltarich, M. A., S. M. B. Thatcher, D. J. Schepker, and J. Park. 2021. “Perceived Faultlines in Group Dynamics: An Individual-Level Perspective.” *Small Group Research* 52, no. 5: 565–599. <https://doi.org/10.1177/1046496420986870>.
- Marks, M. A., J. E. Mathieu, and S. J. Zaccaro. 2001. “A Temporally Based Framework and Taxonomy of Team Processes.” *Academy of Management Review* 26, no. 3: 356–376. <https://doi.org/10.2307/259182>.

- McGrath, J. E. 1991. "Time, Interaction, and Performance (TIP): A Theory of Groups." *Small Group Research* 22, no. 2: 147–174. <https://doi.org/10.1177/1046496491222001>.
- Methot, J. R., E. H. Rosado-Solomon, and D. G. Allen. 2018. "The Network Architecture of Human Capital: A Relational Identity Perspective." *Academy of Management Review* 43, no. 4: 723–748. <https://doi.org/10.5465/amr.2016.0338>.
- Methot, J. R., E. H. Rosado-Solomon, P. E. Downes, and A. S. Gabriel. 2021. "Office Chitchat as a Social Ritual: The Uplifting yet Distracting Effects of Daily Small Talk at Work." *Academy of Management Journal* 64, no. 5: 5. <https://doi.org/10.5465/amj.2018.1474>.
- Meyer, B., and A. Glenz. 2013. "Team Faultline Measures: A Computational Comparison and a New Approach to Multiple Subgroups." *Organizational Research Methods* 16, no. 3: 393–424. <https://doi.org/10.1177/1094428113484970>.
- Meyer, B., A. Glenz, M. Antino, R. Rico, and V. González-Romá. 2014. "Faultlines and Subgroups: A Meta-Review and Measurement Guide." *Small Group Research* 45, no. 6: 633–670. <https://doi.org/10.1177/1046496414552195>.
- Morgeson, F. P., D. S. DeRue, and E. P. Karam. 2010. "Leadership in Teams: A Functional Approach to Understanding Leadership Structures and Processes." *Journal of Management* 36, no. 1: 5–39. <https://doi.org/10.1177/0149206309347376>.
- Mortensen, M. 2014. "Constructing the Team: The Antecedents and Effects of Membership Model Divergence." *Organization Science* 25, no. 3: 909–931. <https://doi.org/10.1287/orsc.2013.0881>.
- Mortensen, M., and M. R. Haas. 2018. "Perspective—Rethinking Teams: From Bounded Membership to Dynamic Participation." *Organization Science* 29, no. 2: 341–355. <https://doi.org/10.1287/orsc.2017.1198>.
- O'Leary M. B., and J. N. Cummings. 2007. "The Spatial, Temporal, and Configurational Characteristics of Geographic Dispersion in Teams." *MIS Quarterly* 31, no. 3: 433. <https://doi.org/10.2307/25148802>.
- O'Leary, M. B., and M. Mortensen. 2010. "Go (Con)figure: Subgroups, Imbalance, and Isolates in Geographically Dispersed Teams." *Organization Science* 21, no. 1: 115–131. <https://doi.org/10.1287/orsc.1090.0434>.
- Ong, W. J., and M. D. Johnson. 2023. "Toward a Configural Theory of Job Demands and Resources." *Academy of Management Journal* 66, no. 1: 195–221.
- Orlikowski, W. J. 1992. "The Duality of Technology: Rethinking the Concept of Technology in Organizations." *Organization Science* 3, no. 3: 398–427. <https://doi.org/10.1287/orsc.3.3.398>.
- Polzer, J. T., C. B. Crisp, S. L. Jarvenpaa, and J. W. Kim. 2006. "Extending the Faultline Model to Geographically Dispersed Teams: How Co-Located Subgroups can Impair Group Functioning." *Academy of Management Journal* 49, no. 4: 679–692. <https://doi.org/10.5465/amj.2006.22083024>.
- Raghuram, S., N. S. Hill, J. L. Gibbs, and L. M. Maruping. 2019. "Virtual Work: Bridging Research Clusters." *Academy of Management Annals* 13, no. 1: 308–341. <https://doi.org/10.5465/annals.2017.0020>.
- Rossignac-Milon, M., N. Bolger, K. S. Zee, E. J. Boothby, and E. T. Higgins. 2021. "Merged Minds: Generalized Shared Reality in Dyadic Relationships." *Journal of Personality and Social Psychology* 120, no. 4: 882–911. <https://doi.org/10.1037/pspi0000266>.
- Rudolph, C. W., B. Allan, M. Clark, et al. 2021. "Pandemics: Implications for Research and Practice in Industrial and Organizational Psychology." *Industrial and Organizational Psychology* 14, no. 1–2: 1–35. <https://doi.org/10.1017/iop.2020.48>.
- Sarbaugh-Thompson, M., and M. S. Feldman. 1998. "Electronic Mail and Organizational Communication: Does Saying "hi" Really Matter?" *Organization Science* 9, no. 6: 685–698. <https://doi.org/10.1287/orsc.9.6.685>.
- Schwartz, L., J. Levy, O. Hayut, O. Netzer, Y. Endevelt-Shapira, and R. Feldman. 2024. "Generation WhatsApp: Inter-Brain Synchrony During Face-To-Face and Texting Communication." *Scientific Reports* 14: 2672. <https://doi.org/10.1038/s41598-024-52587-2>.
- Sewell, G., and L. Taskin. 2015. "Out of Sight, out of Mind in a new World of Work? Autonomy, Control, and Spatiotemporal Scaling in Telework." *Organization Studies* 36, no. 11: 1507–1529. <https://doi.org/10.1177/0170840615593587>.
- Shockley, K. M., and T. D. Allen. 2012. "Motives for Flexible Work Arrangement use." *Community, Work & Family* 15, no. 2: 217–231. <https://doi.org/10.1080/13668803.2011.609661>.
- Sluss, D. M., and B. E. Ashforth. 2007. "Relational Identity and Identification: Defining Ourselves Through Work Relationships." *Academy of Management Review* 32, no. 1: 9–32. <https://doi.org/10.5465/amr.2007.23463672>.
- Smithson, M., and J. Verkuilen. 2006. *Fuzzy Set Theory: Applications in the Social Sciences*. Sage.
- Tajfel, H., and J. C. Turner. 1979. "An Integrative Theory of Intergroup Conflict." In *The Social Psychology of Intergroup Relations*, edited by W. G. Austin and S. Worchel, 33–47. Brooks/Cole.
- Thatcher, S. M. B., B. Meyer, Y. Kim, and P. C. Patel. 2024. "A Meta-Analytic Integration of the Faultlines Literature." *Organizational Psychology Review* 14, no. 2: 238–281. <https://doi.org/10.1177/20413866231225064>.
- Thatcher, S. M. B., and P. C. Patel. 2012. "Group Faultlines: A Review, Integration, and Guide to Future Research." *Journal of Management* 38, no. 4: 969–1009. <https://doi.org/10.1177/0149206311426187>.
- Thompson, R. J., S. C. Payne, A. L. Alexander, V. A. Gaskins, and J. B. Henning. 2021. "A Taxonomy of Employee Motives for Telework." *Occupational Health Science* 6, no. 2: 1–32. <https://doi.org/10.1007/s41542-021-00094-5>.
- Trevor, J., and M. Holweg. 2022. "Managing the New Tensions of Hybrid Work." *MIT Sloan Management Review* 64, no. 2: 35–39. <https://sloanreview.mit.edu/article/managing-the-new-tensions-of-hybrid-work/>.
- Turner, J. C., M. A. Hogg, P. J. Oakes, S. D. Reicher, and M. S. Wetherell. 1987. *Rediscovering the Social Group. A Self-Categorization Theory*. Basil Blackwell.
- U.S. Department of Labor. 2019. "National Compensation Survey: Employee Benefits in the United States, March 2019." <https://www.bls.gov/ebs/publications/pdf/bulletin-2791-september-2019-employee-benefits-in-the-united-states-march-2019.pdf>.
- van der Kleij, R., J. Maarten Schraagen, P. Werkhoven, and C. K. De Dreu. 2009. "How Conversations Change Over Time in Face-to-Face and Video-Mediated Communication." *Small Group Research* 40, no. 4: 355–381. <https://doi.org/10.1177/1046496409333724>.
- Van der Lippe, T., and Z. Lippényi. 2020. "Co-Workers Working From Home and Individual and Team Performance." *New Technology, Work and Employment* 35, no. 1: 60–79. <https://doi.org/10.1111/ntwe.12153>.
- Walther, J. B. 1992. "Interpersonal Effects in Computer-Mediated Interaction: A Relational Perspective." *Communication Research* 19, no. 1: 52–90. <https://doi.org/10.1177/00936509201900100>.
- Wigert, B., J. Harter, and S. Agrawal. 2023. *The Future of the Office Has Arrived: It's Hybrid*. Gallup. <https://www.gallup.com/workplace/511994/future-office-arrived-hybrid.aspx>.
- Windeler, J. B., K. M. Chudoba, and R. Z. Sundrup. 2017. "Getting Away From Them All: Managing Exhaustion From Social Interaction With Telework." *Journal of Organizational Behavior* 38, no. 7: 977–995. <https://doi.org/10.1002/job.2176>.
- Wöhrmann, A. M., and C. Ebner. 2021. "Understanding the Bright Side and the Dark Side of Telework: An Empirical Analysis of Working Conditions and Psychosomatic Health Complaints." *New Technology*,

*Work and Employment* 36, no. 3: 348–370. <https://doi.org/10.1111/ntwe.12208>.

Wu, Y. J., B. Antone, A. Srinivas, L. DeChurch, and N. Contractor. 2021. “Teamwork in the Time of COVID-19: Creating, Dissolving, and Reactivating Network Ties in Response to a Crisis.” *Journal of Applied Psychology* 106, no. 10: 1483–1492. <https://doi.org/10.1037/apl0000969>.

Yong, K., P. V. Mannucci, and M. W. Lander. 2020. “Fostering Creativity Across Countries: The Moderating Effect of Cultural Bundles on Creativity.” *Organizational Behavior and Human Decision Processes* 157: 1–45.

Zadeh, L. A. 1965. “Fuzzy Sets.” *Information and Control* 8, no. 3: 338–353. [https://doi.org/10.1016/S0019-9958\(65\)90241-X](https://doi.org/10.1016/S0019-9958(65)90241-X).

Zhang, S., G. Chen, X.-P. Chen, D. Liu, and M. D. Johnson. 2014. “Relational Versus Collective Identification Within Workgroups: Conceptualization, Measurement Development, and Nomological Network Building.” *Journal of Management* 40, no. 6: 1700–1731. <https://doi.org/10.1177/0149206312439421>.