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Abstract

Meetings are routine in organizations, but their value is often questioned by the employees who must sit through them daily. The science of meetings that has emerged as of late provides necessary direction towards improving meetings, but an evaluation of the current state of the science is much needed. In this review, we examine the current directions for the psychological science of workplace meetings, with a focus on applying scientific findings about the activities that occur before, during, and after meetings that facilitate success. We conclude with concrete recommendations and a checklist for promoting good meetings, as well as some thoughts on the future of the science of workplace meetings.

Keywords: Meetings, Organizations, Workplace

Do We Really Need Another Meeting? The Science of Workplace Meetings

"If you had to identify, in one word, the reason why the human race has not achieved, and never

will achieve, its full potential, that word would be 'meetings.'"

–Dave Barry, American humor columnist & author (Fotsch & Case, 2016)

Meetings are an inevitable expectation for today's workers—for better, or more often, for worse (Rogelberg, Allen, Shanock, Scott, & Shuffler, 2010). Consider the following: in the United States, there are between *11 million* (MCI, 1998) and *55 million meetings* each day (Keith, 2015), with employees averaging *six hours per week* in meetings. Managers spend even more time in meetings, with averages around *23 hours per week*, and up to *80% of work time* in meetings (Rogelberg, Scott, & Kello, 2007). These figures demonstrate the vast amount of organizational resources (e.g., employee time, salaries) that go into meetings. Indeed, meetings exist in nearly every organization regardless of culture, industry, or size. But are these meetings worth the cost?

Unfortunately, empirical evidence tends to point to widespread inefficiency when it comes to workplace meetings. Some estimates indicate that as many as half of all meetings are rated as "poor" by attendees, with organizations wasting approximately $213 billion on ineffective meetings per year (Keith, 2015). Further, poorly structured meetings are costly beyond "time-as-money" considerations, as employees' negative dispositions toward meetings can negatively influence their perceptions of their work, well-being, and organizations' bottom line (Allen, Rogelberg, & Scott, 2008).

When conducted appropriately, meetings can provide a forum for creative thinking, debate, discussion, and idea generation, resulting in clear action plans and next steps for moving work forward (Allen et al., 2015). Meetings are also critical for sharing information across

employees, solving problems, developing and implementing an organizational strategy, and

hosting team debriefs (See Table 1). Yet, more commonly, meetings can serve to derail

individual and organizational effectiveness and well-being by demanding too much of

employees' time, sometimes for little or no benefit. To address these issues, over 100 trade

publications exist that seek to provide help for managers who run, lead, and attend meetings.

However, these sources often do not account for the developing *scientific* field of workplace

meetings research.

Given these challenges, the need to apply findings from meeting science outside the

scientific realm is increasing. Accordingly, this review focuses on exploring the systematic,

scientific study of workplace meetings. We offer an overview of the literature, drawing from

almost 200 articles published in the last decade, offering the most up-to-date evidence. After

exploring a brief history of meeting science, we provide an overview of considerations and best

practices organized around three key phases of meetings: before, during, and after.

Table 1

Overview of Some Primary Purposes of Meetings

Purpose	Description
1. Share information	Information is distributed between attendees but not necessarily reacted to or acted upon
	Example: Weekly update meetings when team members provide updates about what they worked on since the last meeting
2. Solve problems & make decisions	Attendees troubleshoot a new or unusual issue and may decide on how to resolve the issue
	Example: Computer programming team meets to discuss ways to speed up a slow program, where members assess the problem, brainstorm solutions leveraging their different expertise, and finally create a plan for implementing the solution
3. Develop & implement organizational strategy	Leaders create and discuss strategic directions for the organization and how to implement changes

	Example: Top management team meets to discuss organizational goals and values to establish organizational strategy and develop plan	
4. Debrief a team after a performance episode	Following an event or other milestone, a team discusses and reflects on what they expected to happen, what happened, what went well, and what could have been improved	
	Example: Firefighters hold a team debrief after responding to a call to learn from the event for future calls	

The Science of Meetings

Meetings are a unique context—intertwined with, yet distinct from, broader work on groups and teams—with wide-ranging implications for how individuals within organizations perform in their roles, develop attitudes about coworkers, the work itself, and the organization. Meeting science is the systematic study of what occurs before, during, and after meetings, the outcomes of meetings, and how meetings fit within broader organizational contexts (Olien, Rogelberg, Lehmann-Willenbrock, & Allen, 2015; see Table 2). Although meeting science certainly complements and informs the science of teams, especially given the widespread use of meetings by teams, meeting science is context-specific. The science of meetings focuses on the specific, dynamic *context* in which teams and groups operate. This is not to say that every meeting is the same, but that the meeting setting is a common period of concentrated team interaction, where outcomes can be pivotal for directing future interactions, and is therefore especially important to understand.

Table 2

Before, During, and After Meetings: Key Findings from Three Areas of Meeting Science

Context	Key Findings	Reference
Before Meetings: Meeting Design & Composition		

	• Attending many meetings, especially bad meetings, may increase employee stress, fatigue, and perceived workload.	Luong and Rogelberg (2005)
	• Functionally diverse groups can generate better solutions during problem solving because of their ability to consider a greater range of possible solutions.	Horwitz and Horwitz (2007)
	• Attendees should come to the meeting prepared and read the agenda to improve meeting quality and discussion.	Cohen, Rogelberg, Allen, and Luong (2011)
During Meetings: Individual Actions, Interpersonal Interactions, & Leader Behaviors		
Individual Actions	• Arriving late to a meeting spurs negative social reactions and behavioral intentions and reduces objective meeting quality.	Mroz and Allen (2017); Allen et al., 2018
	• High-performing employees participate more than low-performers in meetings.	Sonnentag (2001)
Interpersonal Interactions	• Humor and laughter patterns stimulate positive behaviors and group performance.	Lehmann-Willenbrock and Allen (2014)
	• Complaining is contagious, and groups with complainers perform poorly.	Kauffeld and Lehmann-Willenbrock (2012)
Leader Behaviors	• Managers can build employee engagement by making meetings relevant, short, and participatory.	Allen and Rogelberg (2007)
	• Interactional fairness in meetings can make attendees' participation in meetings more likely	Kauffeld and Lehmann-Willenbrock (2012)
After Meetings: Proximal & Distal Outcomes		
Proximal	• Meetings help set or adjust strategic directions for organizations.	Jarzabkowski and Seidle (2008)
	• Debrief meetings help build and reinforce an organization's climate for safety.	Dunn, Scott, Allen, and Bonilla (2016)
Distal	• Positive team interactions in meetings predict organizational success.	Kauffeld and Lehmann-Willenbrock (2012)
	• Satisfaction with meetings is related to overall job satisfaction.	Rogelberg et al. (2010)

Meeting science sprang from early works by Schwartzman (1986) and Boden (1994), who argued for meetings and talk in organizations as an object of study, rather than a medium through which to study other topics. As such, much of meeting science focuses on meetings in

which *talk* is the action—where people make decisions, discuss a problem, and search for solutions. Following their early work, meeting science began to develop as researchers from various fields applied new methods and techniques to the systematic study of meetings (cf. Allen, Lehmann-Willenbrock, & Rogelberg, 2015). These initial efforts defined a meeting as any pre-scheduled, work-focused gathering of at least two people (Schwartzman, 1986), while more recent conceptualizations explain that meetings need not be pre-arranged, but the discussion must be more structured than a simple talk between coworkers (Rogelberg et al., 2006). However, not all meetings are created equal. Many of us can imagine what characterizes a meeting as "bad", such as starting the meeting late, having no clear agenda, getting off topic, being too long, failing to establish clear next steps or action items, and a meeting crippled with employees doing side tasks (e.g., emailing) during the meeting. In contrast, effective meetings should include key personnel who possess the functional expertise required for the task at hand, provide relevant and important information, are conducted in a timely or punctual manner, and are productive (Allen et al., 2012).

Applying Meeting Science to Ensure "Good" Meetings: Key Questions & Considerations

Expanding from these early studies, meetings research has begun to produce best practices for before, during, and after the meeting. The following sections examine these different meeting phases, highlighting evidence based practices to ensure meeting effectiveness, which are summarized in the form of a checklist in Table 3. Additionally, each section opens with "key questions", generated from thinking about meetings as existing in three phases: before, during, and after the meeting (Allen, Lehmann-Willenbrock, & Rogelberg, 2015).

Before the Meeting: Meeting Design & Preparation

Key Questions: How should meetings be structured? When should we have a meeting? Who

should attend meetings?

Leveraging what is known about factors that contribute to employee perceptions of meeting effectives, psychologists who study meetings have considered design characteristics that promote effective team meetings. Design characteristics concern structural factors related to the meeting. For example, circulating a written agenda before the meeting, going over a verbal agenda at the start of the meeting, starting and ending the meeting on time, and ensuring that the meeting room and equipment are appropriate and high-quality improve employees' perception of meeting effectiveness (Leach, Rogelberg, Warr, & Burnfield, 2009). In terms of meeting structure, meetings should operate according to an agenda that all attendees have access to prior to the meeting, allowing them to make necessary preparations (Cohen et al., 2011). Another important question to consider before a meeting is whether a meeting is necessary. Many meetings also occur when another form of communication would be more effective. Meetings that exist simply to share routine, non-urgent information that does not involve problem solving, decision making, or discussion should be avoided.

The second decision meeting facilitators must make prior to a meeting is who should attend. People often attend meetings that are not relevant to their work, and they do not add much to meeting itself. Meeting leaders should consider the roles and contributions of all members that are anticipated to attend a meeting by answering questions such as: What is the goal of this meeting? What expertise is needed to meet this goal? (Allen, Rogelberg, & Scott, 2008). How frequently do we need to meet to achieve our goal (Luong & Rogelberg, 2005)? As with any form of goal setting, difficult (yet achievable) and specific goals for meetings should lead to higher meeting success (Locke & Latham, 2006). Ensuring that all those invited to the

meeting have meaningful contributions to make based on their roles or expertise can also impact their subsequent attitudes toward workplace meetings and their overall job satisfaction. As Allen and Rogelberg (2013) found, employees who viewed their manager-led meetings as relevant experienced a greater sense of psychological meaningfulness in the meetings, which, in turn, resulted in more highly engaged employees. However, not all pre-meeting preparations reside with the meeting facilitator. Meeting attendees can also promote meeting success reviewing the agenda before the meeting so they are prepared to offer their input. Nonetheless, the decisions made prior to a meeting can only set the meeting up for success, what happens during the meeting is where the real challenge of meeting effectiveness comes into play (see Table 2 for an overview).

During the Meeting: Critical Leader & Attendee Actions

Key Questions: What can leaders do during the meeting to ensure they run smoothly? What can attendees do? How should attendees interact?

During the meeting, the behaviors exhibited by attendees, leaders, and interpersonal interactions that occur between attendees can facilitate or hinder meeting effectiveness. For example, Sonnentag (2001), in an early study in this area, reported that high-performing and low-performing employees act differently in meetings. High performers contribute more than low performers by helping to set goals, facilitating group understanding of work problems, and seeking feedback. Likewise, expert employees—those who are highly functional in a given area—also contribute more to meetings than non-experts (Sonnentag & Volmer, 2009). Additionally, there are also universal actions, like arriving to the meeting on time (Mroz & Allen, 2017), paying attention, and avoiding distracting behaviors (e.g., emailing, instant messaging), that are also important across all meeting attendees.

Because people do not exist in a vacuum, and much of what we do and think is influenced by the social context and the behavior of others, meeting success is also shaped by the behaviors and interaction patterns that emerge between group members (Lehmann-Willenbrock, Meyers, Kauffeld, Neininger, & Henschel, 2011). By targeting communication patterns within meetings, several studies have linked behavioral patterns to outcomes of interest. For example, people who participate in a meeting by bringing up problems relating to poor work processes or performance feel less negative about their work a day *after* the meeting (Starzyk, Sonnentag, & Albrecht, 2018). On the other hand, when one person starts to complain in a meeting, by expressing so-called "killer phrases" that reflect futility or an unchangeable state (e.g., "nothing can be done about that issue" or "nothing works"), other meeting attendees begin to complain, which starts a complaining cycle that can reduce group outcomes (Kauffeld & Meyers, 2009; Kauffeld & Lehmann-Willenbrock, 2012).

Furthermore, humor and laughter patterns in meeting interactions seem to stimulate positive meeting behaviors, such as praising others, encouraging people to participate, and proposing solutions to problems, that predict team performance concurrently and even two years later (Lehmann-Willenbrock & Allen, 2014). Leveraging this knowledge, meeting attendees should take stock of the negative impacts that complaining can have on meting success, while meeting facilitators should work to quell complaining as early as possible. Meeting success often rests on the swift intervention and clear direction that meeting leaders provide.

During meetings, leaders play an unequivocal role in establishing the meeting tone and focus. After establishing and circulating an agenda in the pre-meeting phase, the facilitator is also responsible for setting a clear meeting purpose at the meeting onset and following the agenda during the meeting to ensure the meeting stays on track. Leaders who make meetings

relevant to subordinates, allow people to speak freely and to participate in making decisions, and use time in meetings wisely can foster engagement among their subordinates (Allen & Rogelberg, 2013). Meeting leaders should also be readily equipped to recognize dysfunctional behaviors among attendees (e.g., complaining) and then to *intervene* at the appropriate time to refocus the meeting. For example, if complaining begins, the meeting leader should not participate in the complaining, and instead try to move discussion back to agenda items.

After the Meeting: Considerations for Follow up and Lasting Impact

Key Questions: What are our actions from here? How do we ensure follow through? How do meetings impact the attendees and the organization? What are the immediate and distal outcomes?

While much of meeting success depends on the preparatory steps taken prior to a meeting and the actions of leaders and followers during the meeting, ensuring meeting effectiveness does not end there. Indeed, actions taken well after a meeting ends can make or break attendees' perceptions of meeting success. Therefore, it is critical that meeting organizers follow through on meeting objectives by sending meeting minutes to all relevant parties as a record of decisions made during the meeting, the action plan for next steps, and the designated roles and responsibilities assigned to achieve meeting outcomes (Cohen et al., 2011). Sending meeting minutes also provides meeting details to anyone that was unable to attend the meeting and facilitates attendee follow through. In addition to these actions, leaders must also seek out employee feedback regarding meeting satisfaction to help mitigate the negative perceptions associated with meetings.

One additional critical application for the science of meetings after they occur is in the seeking and incorporating of attendee feedback to inform future meeting design. Since

researchers have found that more time spent in meetings is associated with greater fatigue, stress, and perceived workload, it is important that feedback regarding meeting satisfaction is acquired on a regular basis, especially to identify what makes a meeting bad or unsatisfying. Indeed, Rogelberg and colleagues (2006) expanded this line of inquiry and found that *bad* meetings were negatively associated with well-being, whereas good meetings did not have the same detrimental effect. Further, meeting satisfaction has been noted to be a significant, distinct predictor of employee job satisfaction, even when accounting for other facets of satisfaction (e.g., satisfaction with pay, promotion opportunities, the work itself, and coworkers; Rogelberg et al., 2010). Meetings have also been linked to employee engagement, or the degree to which employees invest personal energies in performing their work (Christian & Slaughter, 2007). Accordingly, managers who take the time to identify potential concerns or issues with current meetings may be able to better structure future meetings if they actively request and are open to feedback after the meeting.

Table 3

Checklist of Factors that Promote Good Meetings

Checklist Item	Sources for Further Information
Before Meeting Considerations	
Meeting Design	
• Call a meeting only when necessary.	Luong and Rogelberg (2006)
• Schedule meeting length to fit with meeting goals; avoid long meetings.	Leach et al., 2009
• Keep meeting size small by only including those whose expertise/knowledge is required.	Boivie, Bednar, Aguilera, and Andrus (2016)
• Match technology to meeting objectives—use rich media (e.g., videoconferencing, teleconferencing) for virtual attendees.	Allison, Shuffler, and Wallace (2015)
Leader & Attendee Responsibilities	
• Set clear goals and desired outcomes for the meeting.	Leach et al. (2009)
• Prepare an agenda that is circulated in advance.	Leach et al. (2009)

• Make sure the meeting is relevant to everyone invited.	Allen and Rogelberg (2013)
• Come prepared by reviewing agenda.	Cohen, Rogelberg, Allen, and Luong (2011)
• Ensure your technology is working and ready to go prior to the meeting start time.	Allison et al. (2015)

During Meeting Considerations

Attendee Responsibilities

• Arrive early (or on-time).	Mroz and Allen (2017); Allen et al., 2018
• Avoid complaining, dominating communication behavior, inappropriate verbal statements.	Kauffeld and Lehmann-Willenbrock (2012)
• Avoid doing unrelated activities and/or nonparticipation.	Odermatt, Konig, Kleinmann, Bachman, Schmitz, and Roder (2018)

Leader Responsibilities

• Follow an agenda that lays out clear goals & outcomes for the meeting	Leach et al. (2009)
• Start the meeting on-time.	Rogelberg et al. (2014)
• Avoid distractions, multitasking during the meeting	Odermatt et al. (2018)
• Allow attendees to participate in decision-making process. If a decision is already made, let everyone know.	Mroz, Yoerger, and Allen (2018); Yoerger, Crowe, and Allen (2015)
• Actively encourage everyone to participate.	Malouff et al. (2012)
• Intervene when interpersonal communication patterns become dysfunctional.	Odermatt et al. (2018)

After Meeting Considerations

Short Term

• Send meeting minutes, action items out immediately following meeting	Cohen et al. (2011)
• Briefly assess meeting satisfaction, quality immediately following meetings to inform future meeting design	Rogelberg et al. (2010)

Long Term

• Incorporate meeting satisfaction as a component of organization-wide employee engagement/satisfaction surveys	Rogelberg et al. (2010)
• Have leaders critically examine routine meetings to determine their necessity, value.	Luong and Rogelberg (2006)

The Future of Meeting Science

Although current work on meetings reveals a great deal about how meetings influence individuals, teams, and organizations, emerging work suggests promising new directions for the study of meetings and further development of the science. We provide some insights into new work on meetings, as well as some suggestions on how to advance the field. First, responding to general calls to move psychological research away from surveys, innovative research in the meeting context has begun to examine video- and audio-recorded *behaviors* in meetings. By focusing on behaviors, researchers can begin to examine specific, behaviorally-based interventions to help meeting leaders and others overcome poor communication problems, complaining, and otherwise derailed meetings. New behavioral studies of meetings also consider patterns of behaviors within groups, and how those behaviors relate to individual, group, and organizational outcomes. Lehmann-Willenbrock and Allen (2017) provide an overview of these methods, classified as modeling temporal interaction dynamics, and their complexities.

Second, exploration regarding the impact of technology in meetings both for meeting purposes and for other purposes is needed. Technology can be pivotal for bringing attendees together from around the world via virtual meetings (Allison et al., 2015), but it can also be a major distraction. Having phones or laptops available during meetings may encourage multitasking, resulting in inattention and distraction, but the effect is not yet clear. Work is currently underway that seeks to address how meeting attendees respond to others using cellphones and laptop during meetings, either for personal or business-related responses, but additional research is needed to better understand what the right role may be for technology.

Third, and perhaps most importantly, meeting science needs additional conceptual and theoretical clarity. To fully emerge as a science in, workplace meetings scholars must grapple with the questions of *why* and *how* meetings work and impact others, beyond reliance on the

variety of current theories. For example, one theoretical orientation for conceptualizing the role

of meetings in organizations is meetings as stressors (Scott, Allen, Rogelberg, & Kello, 2015).

Work in this vein (e.g., Luong & Rogelberg, 2005; Rogelberg et al., 2006) has often used

conservation of resources (COR) theory (Hobfoll, 1989). In brief, COR theory proposes that

individuals experience psychological stress when valued resources are lost or threatened. In the

case of meetings, the resources are often time for work and a sense of goal accomplishment

(Mroz & Allen, 2017). Another theoretical approach is to conceptualize meetings as rituals

wherein groups and organizations form cultures, identities, and climates (Scott et al., 2015).

Nonetheless, the papers reviewed here occasionally suffer from a lack of theory or theories that

are mostly mundane and do not directly explain what is observed. One or more unifying

meetings-oriented theories that focus on multiple levels of analysis could overcome these

limitations.

Recommended Readings

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Cohen, M. A., Rogelberg, S. G., Allen, J. A., & Luong, A. (2011). (See References). A paper

    that examines how meetings are designed can influence perceived meeting quality.

Lehmann-Willenbrock, N. L., & Allen, J. A. (2017). (See References). This paper describes how

    to study and analyze behavioral patterns within groups—an emerging area of meeting

    science.

Schwartzman, H. B. (1986). (See References). The original article based on the book by the same

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