Tentative Is Not Maybe: A Mixed-Methods Study of Meeting Invitation Responses and Attendance

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Abstract

Workplace calendar systems let invitees answer a meeting invitation with accept, decline or tentative, or leave it unanswered. Tentative was designed to mean that attendance is uncertain. We studied how it is used in a 2,400-person organisation, combining 14 months of calendar and video-meeting logs (186,412 invitations to 41,206 online meetings) with 22 interviews, a survey of 318 meeting organisers, and an eight-week field deployment of a calendar add-in. Invitees who replied tentative attended 31.2% of the time, less often than invitees who did not reply at all (38.6%). In a mixed model, a tentative reply had lower odds of attendance than no reply (odds ratio 0.71, 95% CI 0.67 to 0.75), and attendance after a tentative reply was lower than after no reply in every meeting size above two. Tentative replies were sent faster than any other kind (median 4 minutes after the invitation) and were rarely revised. Interviewees described tentative as a polite way to decline, and some used it to keep the time blocked in their own calendar. Several valued it as the only reply that creates no further obligation. Organisers estimated that 58% of tentative invitees would attend. The add-in asked people who chose tentative to say when they would confirm. It more than halved the use of tentative and reduced the gap between expected and actual headcount from 2.1 to 1.4 people per meeting. In 23% of cases the chosen confirmation time was after the meeting had started. We discuss the gap between the designed and the practised meaning of calendar replies and what organisers' tools should show.

CCS Concepts

• Human-centered computing → Empirical studies in collaborative and social computing; • Human-centered computing → Collaborative and social computing systems and tools.

Keywords

calendars, meetings, RSVP, coordination, field deployment, mixed methods

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1 Introduction

Shared calendars are among the oldest groupware still in daily use [7, 14]. Their basic act of coordination, inviting people to a meeting and collecting replies, has hardly changed in thirty years. An invitee can accept, decline or reply "tentative", and many do not reply at all. The organiser sees a count of each.

The tentative reply has a clear designed meaning. It tells the organiser that the invitee may come and has not decided. Organisers use the counts to decide whether to hold a meeting at all and how long to wait for people at the start. If tentative means what it was designed to mean, those decisions are reasonable. We started this project because a facilities manager at one of our partner organisations told us that tentative "means no", and we wanted to know whether the logs agreed.

They do. In 14 months of data from a 2,400-person organisation, invitees who replied tentative attended less often than invitees who did not reply. The gap held in every meeting size above two. Tentative replies were also the fastest to be sent and among the least likely to be revised. This paper reports that finding and what we learned when we asked people why. It makes four contributions:

- A log study of 186,412 meeting invitations linking calendar replies to attendance measured from video-meeting joins (Section 4).
- An interview study of 22 invitees, organisers and executive assistants on what each reply means in practice (Section 5).
- A survey of 318 organisers showing that they read tentative replies as far more likely to attend than they are (Section 6).
- A field deployment of a calendar add-in that asked tentative invitees to say when they would decide, and its effects on replies and headcount (Section 7).

2 Related Work

2.1 Calendars and scheduling

Grudin [10] used automatic meeting scheduling as a central example of a CSCW application that fails because the people who must do extra work (invitees keeping calendars up to date) are not the people who benefit (organisers). Ehrlich [7] studied the adoption of electronic calendars in offices and found that their value depended on everyone keeping them current. Palen [14] described how people in a large organisation used calendar access settings and entries to manage availability and to signal it to others. Tullio et al. [19] built a shared calendar that inferred whether people would attend scheduled events, and Begole et al. [4] visualised rhythms in people's availability over the working week. None of this work examined the reply options themselves, or tested replies against attendance.

2.2 Meetings and time

Meetings take up a large and growing share of working time, and the time they take is associated with lower well-being [2, 17]. Perlow [15] described a "time famine" among software engineers whose working days were broken up by interruptions and meetings, and the

strategies they used to protect uninterrupted time. One of our interview themes is a strategy of this kind.

2.3 Intentions, politeness and replies

A reply to an invitation is a statement of intention, and the gap between intention and behaviour is well documented [1, 18]. Specifying when and how one will act, an implementation intention, narrows that gap [9], and our deployment borrows the idea. A reply is also a social act. Declining an invitation from a senior colleague threatens their face, and Brown and Levinson [6] describe the indirect strategies people use to soften such refusals. Goffman [8] described how people manage the impressions they give, which bears on replies that everyone in a meeting can see. Two earlier studies examined RSVP behaviour for workplace social events [11] and for recurring team meetings [16]. Both measured stated intentions only.

3 Setting and Data

The organisation is a software and services company with about 2,400 employees in four countries, working in a hybrid arrangement. It uses a commercial calendar and a commercial video-meeting platform. With the agreement of its works council and our institutional review board, the company's IT department extracted metadata for all internal meetings between February 2024 and March 2025: organiser, invitees, scheduled start and end, recurrence, each invitee's reply with its timestamp and any later changes, and video-platform join and leave times. Meeting titles, descriptions and content were not extracted. Identifiers were replaced with stable pseudonyms before the data left the company, and employees could opt out (41 did).

We restricted the analysis to online-only meetings, meaning meetings with a video link and no room booking, because only for these does the join log give a complete record of attendance. We counted an invitee as having attended if they joined for at least two minutes. Meetings that were cancelled, rescheduled after the last reply, or attended by no one were excluded. This left 41,206 meetings and 186,412 invitations, where an invitation is one invitee for one meeting, not counting the organiser.

4 Study 1: Replies and Attendance

4.1 Descriptive results

Table 1 summarises replies and attendance. Most invitations were accepted. One in seven received a tentative reply, and almost one in five received no reply. Attendance among tentative invitees, 31.2%, was lower than among invitees who did not reply, 38.6%. Tentative replies were rarely revised: 12.4% were changed before the meeting, 8.9% to accept and 3.5% to decline.

Table 1: Replies to 186,412 invitations to 41,206 online meetings, with median time from invitation to reply and the share of invitees who attended. Ninety-five per cent intervals for attendance, clustered by invitee, are within ±0.6 points for every row.

Reply	Invitations	Share (%)	Median time to reply	Attended (%)
Accept	108,678	58.3	38 min	84.1
Tentative	26,471	14.2	4 min	31.2
Decline	16,963	9.1	19 min	2.3
No response	34,300	18.4		38.6
All	186,412	100.0		60.8

Tentative replies were also the fastest (Figure 1). More than half were sent within five minutes of the invitation, and a quarter within the first minute, usually from a phone. Accepts were slower and more spread out. Interviewees later described the speed of tentative replies as the point of them (Section 5).

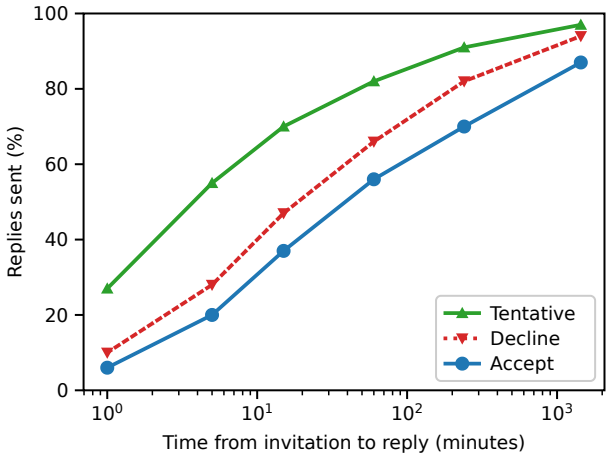


Figure 1: Cumulative share of replies sent within a given time of the invitation, by reply type (log time axis). Tentative replies are the fastest: more than half arrive within five minutes.

4.2 Model

Invitees and meetings differ in ways that could produce this pattern on their own. Someone who receives many invitations may both attend less and reply tentatively more often. We therefore fitted a logistic mixed model for the attendance y_{im} of invitee i at meeting m:

$$\operatorname{logit} \Pr(y_{im} = 1) = \beta_0 + \boldsymbol{\beta}_r^\top \mathbf{r}_{im} + \boldsymbol{\beta}_z^\top \mathbf{z}_{im} + \boldsymbol{\delta}^\top (\mathbf{r}_{im} \otimes \mathbf{z}_{im}) + u_i + v_m \quad (1)$$

where $\mathbf{r}_{im}$ codes the final reply with no response as the reference, and $\mathbf{z}_{im}$ holds meeting and relationship covariates: the number of invitees on a log scale, recurrence, whether the organiser is the invitee's manager, and whether the invitation was sent less than 24 hours ahead. Continuous covariates are centred at their means. The vector $\boldsymbol{\delta}$ contains the reply-by-covariate interactions shown in Table 2, and $u_i \sim \mathcal{N}(0, \sigma_u^2)$ and $v_m \sim \mathcal{N}(0, \sigma_v^2)$ are invitee and meeting random intercepts. We fitted the model with lme4 [3].

4.3 Results

The model confirms the descriptive result (Table 2). Against no response, a tentative reply had an odds ratio for attendance of 0.71 (95% CI 0.67 to 0.75) at average meeting size. The association depended on context. When the organiser was the invitee's manager, a tentative reply was associated with much higher attendance (interaction OR 1.92), and the gap between tentative and no reply grew with the size of the meeting.

Table 2: Logistic mixed model for attendance (186,412 invitations). Odds ratios with 95% Wald intervals. The reference reply is no response. Invitee random-intercept SD 0.92; meeting random-intercept SD 0.61.

Term	OR	95% CI
Reply: accept	9.84	9.31, 10.40
Reply: tentative	0.71	0.67, 0.75
Reply: decline	0.04	0.03, 0.04
Invitees (per doubling)	0.78	0.76, 0.80
Recurring meeting	0.88	0.84, 0.92
Organiser is invitee's manager	2.61	2.43, 2.80
Invited less than 24 h ahead	1.21	1.15, 1.27
Tentative × organiser is manager	1.92	1.64, 2.25
Tentative × invitees (per doubling)	0.86	0.82, 0.90

Figure 2 shows attendance by reply and meeting size. In one-to-one meetings a tentative reply was associated with slightly higher attendance than no reply (68.0% against 63.5%). From three invitees upwards the order reverses, and the gap widens as meetings grow. In meetings of 16 or more, 16.8% of tentative invitees attended, against 30.1% of those who did not reply.

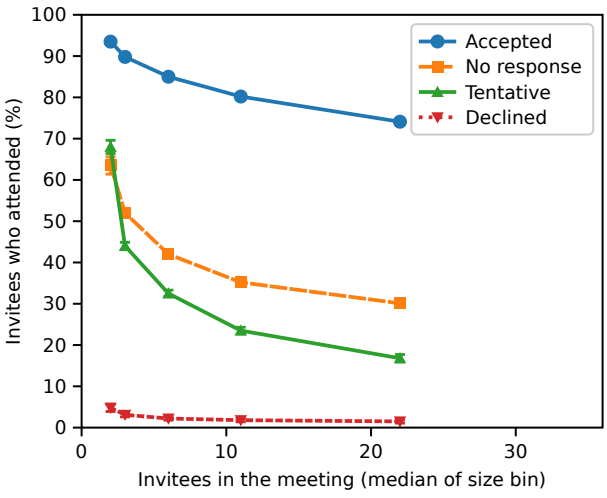


Figure 2: Attendance by reply type and number of invitees, with 95% intervals clustered by invitee. Meetings are grouped into bins of 2, 3 to 4, 5 to 8, 9 to 15 and 16 or more invitees, and each point is placed at the median size in its bin. In one-to-one meetings tentative invitees attend slightly more often than invitees who do not reply; in every larger meeting size they attend less often.

5 Study 2: Interviews

5.1 Participants and procedure

We interviewed 22 employees of the same organisation (P1 to P22), recruited through an internal announcement and selected for a spread of roles: eight individual contributors, six managers, five project coordinators and three executive assistants who schedule meetings for senior staff. Twelve were women, nine men and one preferred not to say. Interviews lasted 30 to 55 minutes (median 41) and used the participant's own calendar from the previous week as a prompt. We analysed transcripts with reflexive thematic analysis [5]. Two authors coded independently and developed themes through discussion; following McDonald et al. [13] we did not compute inter-rater agreement.

5.2 Tentative as a polite no

Most participants said they used tentative, at least sometimes, for meetings they did not intend to attend. It let them avoid an explicit refusal, particularly to someone more senior: "Tentative is how you say no to someone above you" (P4). Several described a decline as something that needs a reason, whereas tentative does not. This is the face-saving strategy that Brown and Levinson [6] describe, applied through a button. It also fits the interaction with manager-organised meetings in Table 2. Participants said they did not use tentative in this way with their own managers, because their managers would notice.

5.3 Holding the slot

The second use was less expected. A tentative reply keeps the meeting in the invitee's calendar and shows that time as busy to anyone else trying to schedule them. Several participants used tentative replies to protect time: "I put tentative so it stays in my calendar and blocks the time. Then I can use the time" (P11). For these participants a tentative reply to a large meeting was a way of reserving an hour for their own work, close to the time-protection strategies Perlow [15] observed. It probably accounts for part of the low attendance in large meetings, where an absence is least likely to be noticed.

5.4 No homework

Participants contrasted the obligations attached to each reply. Accepting commits you to attending, and declining invites a question about why. Tentative was described as the only reply that creates no further work: "If I accept, I have to go. If I decline, I have to explain. Tentative is the only one with no homework" (P15). Not replying at all was seen as rude by some participants and as normal by others, depending mostly on their team. Nobody described tentative as a promise to decide later, which is its designed meaning.

5.5 Organisers count tentatives as yeses

Organisers knew that tentative replies were unreliable but still counted them when deciding whether to hold a meeting: "I count tentatives as yeses. I know I shouldn't" (P19). The three executive assistants were the exception. They interpreted replies according to who sent them and had developed their own rules: "When I book the CEO's meetings I treat tentative as no and no response as maybe" (P20). This rule matches the log data better than the designed semantics do.

6 Study 3: Organiser Survey

We surveyed employees who had organised at least ten meetings in the previous three months. Of 1,140 invited, 318 completed the survey (28%). We asked them to estimate, for a typical meeting of about eight people that they organise, what percentage of invitees with each reply would attend.

Organisers overestimated attendance among tentative invitees by a wide margin and underestimated it among invitees who did not reply (Figure 3). The mean estimate for tentative invitees was 58% (SD 19), against 31.2% observed. For invitees who did not reply it was 27% (SD 18), against 38.6% observed. Estimates for accepted and declined invitations were close to the observed rates. Organisers ranked tentative above no response, and the logs rank it below.

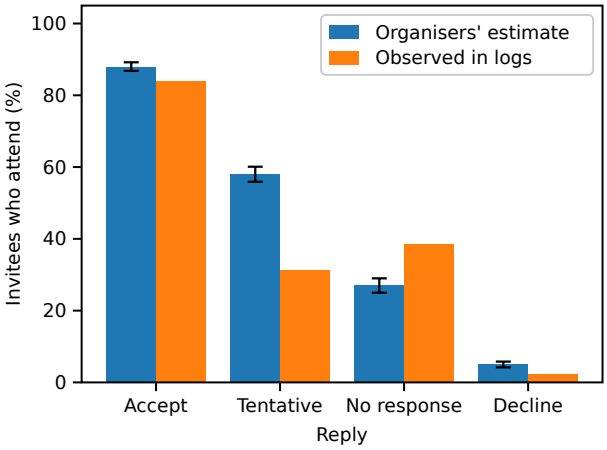


Figure 3: Organisers' mean estimates of attendance by reply type (n = 318, 95% intervals) against attendance observed in the logs. Organisers rank tentative above no response; the logs rank it below.

7 Study 4: Field Deployment

7.1 Design

We built a calendar add-in that changed one thing. When an invitee chose tentative, the add-in asked them to pick a time by which they would confirm, offering a default of 24 hours before the meeting, or two hours before for meetings less than a day away. At the chosen time the add-in reminded them and offered accept and decline. The organiser saw each tentative reply with its confirmation time. The design follows the idea of an implementation intention [Gollwitzer [9]]: it attaches a specific time to a vague intention. We treated it as a technology probe in the sense of Hutchinson et al. [12], intended to provoke reflection on what tentative means as much as to measure an effect.

Two departments with 212 employees took part, for four baseline weeks with the standard client followed by four weeks with the add-in. We compared the two periods on the share of each reply, the share of tentative replies resolved before the meeting, and the headcount error of each meeting,

$$e_m = \left| A_m - \sum_{i \in m} y_{im} \right|, \tag{2}$$

where A_m is the number of accepts at the scheduled start and the sum counts invitees who attended. A small e_m means that the organiser's view at the start of the meeting was close to what happened.

7.2 Results

The add-in more than halved the use of tentative, from 14.0% of replies in the baseline weeks (3,912 invitations) to 6.2% with the add-in (4,105 invitations). Declines rose from 8.8% to 13.5%. Accepts and non-replies changed little, from 58.9% to 60.7% and from 18.3% to 19.6%. Of tentative replies made with the add-in, 64.3% were resolved to accept or decline before the meeting, against 11.8% in the baseline weeks. Mean headcount error fell from 2.1 to 1.4 people per meeting; in a linear mixed model with a meeting-series random intercept, the difference was −0.7 people (95% CI −0.9 to −0.5).

Not everyone engaged with the question the add-in asked. In 23.1% of tentative replies made with the add-in, the confirmation time chosen was after the scheduled start of the meeting. Most of these came from the default being edited rather than accepted. In follow-up conversations, two participants said they had picked a late time deliberately so that the reminder would not arrive before they knew whether something better was on. Others said the question itself had changed what they did: "It made me admit I wasn't coming" (P7).

Eight weeks in two departments is too short to tell whether the effect would persist, and both departments knew they were in a study.

8 Discussion

8.1 Designed and practised meanings

The calendar's reply options were designed as statements about attendance. In practice, tentative has come to carry three other meanings: a polite refusal, a hold on one's own time, and a reply that closes the matter without commitment. None of these is a statement about attendance, and the log data show it. Grudin [10] argued that calendar features fail when the people who do the work are not the people who benefit. Tentative is a case where the invitee has found a way to do less work, and the cost falls on the organiser, whose counts no longer mean what they appear to mean.

8.2 What organisers should see

Organisers in our survey ranked tentative replies above silence, and they were wrong by a wide margin. One response is to show organisers an expected headcount instead of raw counts, using attendance rates conditioned on reply, meeting size and relationship, as in Table 2. Such an estimate would be most useful for large meetings, where tentative replies are least informative and organisers have the least idea who will come. It also raises a privacy question. An estimate built from an individual's history reveals that history to whoever organises their meetings. An estimate built only from meeting-level features would avoid this at some cost in accuracy, and we would start there.

8.3 Separating replies from holds

The second meaning of tentative, holding time, suggests a different fix. People who use tentative to block time want a calendar entry that protects their time; they do not want to send the organiser a message. A calendar that let invitees keep a meeting as a private hold, separately from their reply, would remove one reason to send a misleading tentative. We did not test this.

8.4 Limitations

All data come from one organisation and from online-only meetings, where joining the call is a good measure of attendance. In-person and hybrid meetings may behave differently. We measured attendance as joining for two minutes, which counts people who joined and left, and misses people who watched over a colleague's shoulder. The survey had a 28% response rate, and organisers who answered may be more attentive to replies than those who did not. The deployment was short, in two departments, and both knew they were being studied.

9 Conclusion

In this organisation a tentative reply to a meeting invitation meant, on average, that the invitee would not come. Except in one-to-one meetings, it said less about attendance than no reply at all. Invitees sent it quickly and seldom revisited it. They used it to decline politely or to keep time free, and organisers read it as a likely yes. Asking invitees when they would decide changed their behaviour more than we expected. Whether a calendar should ask that question, or should stop offering a reply that has drifted this far from its meaning, is a design decision that probably depends on how much organisers rely on the counts.

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