Can Virtual Conferences Promote Social Connection?

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Abstract

Across disciplines, people attend conferences in part to build connections with new ties and to reinforce connections with existing ties--but conference travel comes at a high cost in terms of time, money, and carbon. The COVID-19 pandemic forced major conferences, including TED's annual flagship conference, to move online. Thus, TED2020 offered an opportunity to examine whether attending a virtual conference can promote feelings of social connection. Our findings provide the first evidence that actively participating in a virtual conference may be linked to enhanced feelings of social connection, particularly with new ties. Over the course of the conference, TED attendees exhibited rising levels of connection to new ties, whereas feelings of connection to existing ties remained unchanged. These findings provide suggestive evidence that virtual conferences may be more effective in building connections with new social ties than in strengthening connections with existing social ties. Our findings also point to the types of conference activities that may be especially beneficial for promoting the development of new social ties.

Significance Statement

Humanity faces a pressing need to reduce carbon consumption by 90% in the next three decades (IPCC, 2018). The present research suggests that participating in virtual conferences may provide a carbon-neutral opportunity to foster feelings of social connection, particularly with new ties.

Can Virtual Conferences Promote Social Connection?

People attend conferences not only to learn, but also to build connections with others (e.g., Dunn, 2007; Pain, 2017), which may help to explain why many conference attendees travel great distances to be together in person. But satisfying this important need for connection comes at a substantial cost in terms of carbon (as well as time and money). For example, flying round-trip from Boston to a conference in San Francisco generates more carbon emissions than an average person in a developing country generates in a year (Sarabipour et al., 2020). Summing across conference participants, the Fall Meeting of the American Geophysical Union in San Francisco generated 80,000 tons of CO₂ (Klöwer et al., 2020), equivalent to the annual emissions of almost 1500 American families (EPA, 2020). By holding conferences virtually instead, it would be possible to reduce conference-related carbon emissions by 99.9% (Klöwer et al., 2020). However, no research has examined whether attending virtual conferences can promote feelings of social connection.

Because COVID-19 forced conference organizers to move their events online, the pandemic provided an opportunity to test whether engaging in virtual conferences can promote feelings of connections with new and existing social ties. Specifically, we examined attendees' feelings of social connection during the TED2020 conference. As TED's flagship event, this annual conference brings together scientists, artists, and thinkers across disciplines for one week of talks, workshops, and social events. Due to the pandemic, TED2020 was held virtually, with conference events spread out over 8 weeks (May 18-July 10, 2020). Each week featured a single *mainstage session*, mixing artistic performances, TED talks, and interviews with distinguished thinkers. In addition, attendees could choose to participate in interactive events via Zoom, including *social hours* (informal socializing in small groups), *discovery sessions* (expert-led workshops encouraging active participation), and *idea dates* (brief one-on-one conversations between randomly paired attendees). We tracked attendees'

participation in these interactive events and measured their feelings of connection following each week of the conference.

Because TED's annual conference attracts both returning and new attendees, we were able to measure people's feelings of connection to their existing social ties, as well as new social ties. If participating in virtual conferences can effectively promote feelings of social connection, then individuals who engage in more events should feel more connected to new and existing ties, and feelings of connection should grow over time. Although randomly assigning people to participate in conferences is not feasible, precluding causal inferences, this correlational pattern would provide the first evidence that virtual conference participation is linked to enhanced social connection. In addition, our data enabled us to explore what types of interactive activities were linked to enhanced social connection.

Methods and Results

We received ethical approval from the University of British Columbia, and all participants provided informed consent prior to data collection. Because the TED2020 virtual conference lasted a total of eight weeks, we invited attendees to rate their feelings of social connection at the end of each week. Specifically, attendees rated how connected they felt to members of the TED community who they already knew before TED2020 (*existing ties*), and how connected they felt to members of the TED community who were outside of their immediate circle of TED friends (*new ties*) on scales from 1 (*Not at all connected*) to 4 (*Very connected*). Participants also reported their attendance at interactive events held throughout the conference including social hours, discovery sessions, and idea dates.

Because we obtained the most survey responses for Week 1, we began by examining the relationships between conference participation during the first week of the conference and feelings of connection at the end of the week. Correlational analyses revealed that participants who attended more interactive conference events during the week reported

feeling more connected to both new ties ($r = .52$, $t(84) = 5.52$, $p < .001$, $N = 86$) and existing ties ($r = .38$, $t(81) = 3.71$, $p < .001$, $N = 83$) at the end of the week.

Next, we examined the relationships between participation in specific types of interactive events and feelings of connection at the end of Week 1. To do so, we conducted two regression analyses predicting feelings of connection to existing ties and new ties based on whether participants had attended at least one (a) social hour, (b) discovery session, or (c) idea date (with all predictors entered simultaneously). Participating in discovery sessions ($b = 0.34$, $t(83) = 2.05$, $p = .04$) and idea dates ($b = 0.46$, $t(83) = 2.63$, $p = .01$) was associated with higher levels of connection to new ties, whereas there was no significant effect of attending social hours ($b = 0.21$, $t(83) = 1.19$, $p = .24$). We did not find any significant relationships between attending these interactive events and feelings of connection to existing ties, all p 's $> .17$.

Was conference participation linked to greater feelings of connection over time? We identified attendees who completed our survey for at least two weeks of the conference, and compared how socially connected they felt in their first versus last survey. To account for the multilevel structure in the data, we used multilevel modelling allowing the intercept to vary by participant. We found that attendees felt significantly more connected to new ties in their last survey than in their first survey, $b = 0.50$, $t(79.05) = 5.08$, $p < .001$, $N = 91$, ICC = .38 (see Figure 1). Interestingly, there was no significant increase in their feelings of connection to existing ties, $p = .20$, $N = 84$, ICC = .42. Comparing feelings of connection to new versus existing ties, attendees felt more connected to existing (vs. new) ties in the first survey they completed, $t(76) = 3.98$, $N = 77$, $p < .001$, but by the last survey attendees completed, there was no significant difference in how connected they felt to existing vs. new ties, $t(71) = -0.13$, $N = 72$, $p = .89$.

Figure 1. TED attendees felt significantly more connected to members of the TED community who were outside their immediate TED circle over time (new ties). In contrast, there was no difference in attendees' feelings of connection to members they already knew before TED 2020 (existing ties). "First Week" refers to the first week in which a participant completed our survey (typically week 1) and the "Last Week" refers to the last week in which a participant completed our survey (not necessarily the final week of the conference). Error bars represent ± 1 SE.

Discussion

Our findings provide the first evidence that actively participating in a virtual conference may be linked to enhanced feelings of social connection. By the end of the first week of TED2020, attendees who participated in more events reported feeling more connected to both new and existing social ties. In particular, participating in discovery sessions (expert-led workshops) and idea dates (one-on-one conversations) was associated with greater feelings of connection to new ties (but not existing ties), suggesting that these types of events may be particularly valuable in building new social connections. Over the course of the 8-week conference, TED attendees also exhibited rising levels of connection to those outside their immediate circle of TED friends, whereas feelings of connection to

existing ties remained unchanged. These findings provide suggestive evidence that virtual conferences may be more effective in building connections with new social ties than in strengthening connections with existing social ties. Indeed, by the end of the conference, attendees felt as connected to their new ties as they did to their pre-existing ties.

Of course, in interpreting these results, it is essential to recognize that we cannot draw causal conclusions based on our correlational data. It is entirely plausible that people who felt more connected to other TED attendees chose to attend more events (and more small-group events in particular) both during Week 1 of the conference and over time. If this explanation fully accounted for the relationship between participation and connection, however, we would expect to see similar associations between conference participation and connection with both new and existing ties; it is less clear how this alternative explanation could account for the more robust relationships between participation and feelings of connection with new (vs. existing) ties.

It is also important to recognize that our data do not address whether virtual conferences are as effective as in-person conferences in promoting feelings of social connection. Descriptively, attendees reported fairly low levels of connection overall to both new and existing social ties--with ratings falling closer to “not at all connected” than “very connected”. We would speculate that TED attendees would report a much higher level of connection following the usual week-long in-person conference, an assumption that could be tested with further post-pandemic research.

Finally, it is important to note that we chose to study TED’s annual flagship conference not as a prototypical example of conferences more broadly, but rather as an *optimal* example of what may be possible to achieve with virtual conferences; TED is a high-budget conference run by dedicated professional staff members and attended by a diverse and

passionate community. Thus, the benefits for social connection observed here represent what is possible, rather than what is typical from virtual conferences.

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