

# The Virtual Side of Large-scale Hybrid Events: Reflections from a Study of a Large Virtual Conference

A position paper for the CSCW 2018 workshop on Hybrid Events

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## INTRODUCTION

In this position paper I draw on prior work to inform approaches to the analysis and design of large-scale hybrid events. Somewhat counter-intuitively, the prior work is a study of a large-scale conference that was *entirely virtual*. Its entirely-virtual nature is valuable in two ways:

- It foregrounds the interactive challenges of large-scale events. This is because the virtual conference (which mimicked the events and activities of a professional conference) had problems due to bugs and technical limitations. The resulting breakdowns help illuminate some of the interactive requirements of conferences, and also suggest a way of thinking about large-scale events.
- It illustrates some of the challenges that accompany virtual participation in *any* large-scale hybrid event. Understanding these challenges can help in designing hybrid events that work better for virtual participants.

While the examples I describe have to do with avatars, virtually everything I discuss could apply to telerobots, etc.

## THE AGM: A 500 PERSON VIRTUAL CONFERENCE

In the Fall of 2009, my colleagues and I conducted a mixed-methods study of a corporate research conference that occurred entirely in virtual reality [1]. The conference, referred to as the AGM (Academy General Meeting), attracted 502 people from around the world and lasted for three days; it included presentations in an ‘auditorium,’ poster sessions, and social gatherings (Figure 1).

The AGM used a customized, behind-a-firewall version of Second Life®, with 3D-spatialized audio, a virtual environment that mimicked a conference facility, and avatars that could move about the environment and speak with one another. It also had some non-mimetic capabilities such as flying, teleporting, and textual chat among avatars. Most participants used a headset for voice and audio, and used a mouse, keyboard, and desktop display to experience and navigate the virtual environment.

The AGM was studied using a combination of logging, surveys, participant-observation, and interviews with 30 participants. The conference was successful, as indicated both by participant reports and by the fact that the majority of participants returned for each of the three days of the conference. More information on the methodology and analyses can be found in [1] and [7].

## INTERACTION AT LARGE-SCALE EVENTS

Large-scale events differ from smaller events in many ways, but of particular import for our purposes is that they pose new interactive challenges. Social interaction does not scale smoothly. Talk at a dinner party with 4 people is markedly different from one with 10 people, and that in turn is different from one with 25 people. *As the number of interactants increases, it becomes difficult, and eventually impossible, to have a single coherent conversation.*



Figure 1. Three views of a virtual conference: presentation; poster session; social gathering

Assuming one of the purposes of a large-scale event is to afford coherent conversation among people, then a key design challenge is how to enable those conversations to occur. This is especially important – and nuanced – in events like conferences where one of the aims is to get strangers to talk with one another. In our analysis of the virtual conference, we offered a simple framework for thinking about how to support productive conversations in large group settings: CoFIRE. CoFIRE supposes that there are three stages to supporting conversation among large numbers of people: **Coalesce** (into small groups); support **Focused Interaction** (within a group); and **Remix** (into different conversational groups). More specifically:

- **Coalescence.** First, interactants in a large gathering need to coalesce into smaller groups so that they can have coherent conversations. This includes both the formation of a group *ex nihilo*, and its growth as others join it. The issues here include that a participant must decide whether to join a group, which group to join, whether the group will welcome a new member, and what the groups focus of interaction is or will be.
- **Focused Interaction.** Second, a group needs to initiate and manage its focused interaction. In addition to the usual issues attending the conduct of talk [2, 4, 6], as Goffman has noted, small groups embedded in large gatherings face special challenges such as needing to “shield” their interactions from the gathering to maintain a degree of privacy, while also managing the degree to which their interaction “drifts” from the settings’ norms. [2, pp 151-190].
- **Remixing.** Third, as time goes on, groups must change their make-up to maximize the possible interactions. Only through this remixing can the benefits of attending a large event — interacting with many different people — be realized. Issues here include ways for an individual to gracefully disengage from the group’s interaction, or ways in which the group may collectively end its interaction and disperse to join other groups.

While not all events at a conference fit comfortably into this framework, it is a useful way of analyzing and designing for many multi-person event venues.

## INTERACTIVE CHALLENGES AT THE CONFERENCE

In this section I discuss two interactive challenges highlighted by the study of the AGM. Both of these challenges have to do with one of the *raison d’etres* of conferences: talking with strangers

### Approaching and Joining Small Groups

One of the reasons that participants felt the AGM was valuable was because they were able to recognize and engage with people they already knew. This was largely due to the

fact that all participants had their names floating over their heads and, unlike conference badges, the names could be read from a distance. (This a nice example of beyond-being-there [5] functionality, where the virtual world offers advantages over the material world).

However, while a participant could, for example, see a group of people across the room that included a known colleague, participants were often hesitant to approach the group. This was due, in large part, to a technology limitation, and a design ‘bug.’ The technology limitation was that the avatars had little peripheral vision (a complaint also made about tele-robots). The design bug was that, for reasons we were unable to discover, the 3D audio that was the public communication mode of the conference carried too far. As a result, participants reported feeling like eavesdroppers, hearing presumed private conversation while they were too far away for anyone in the group to notice them. The restricted peripheral vision of the group members also meant that even as a person came close to the group, the group members would not notice and would fail to make welcoming signs (e.g., making eye contact, smiling, edging to the side to make room), or conversely, would fail to provide cues that the conversation was private. As one participant put it: “*In Second Life it becomes really strange to try to get into those discussion groups. It doesn’t feel natural at all. It is hard to understand whether they’ve gone to the side because they don’t want to disturb, or if they want to have a private discussion... I am missing all of this nonverbal communication forms: seeing someone, making sure they look back [before I] go and talk to this person.*” So, with respect to the CoFIRE framework, the technology and design limitations inhibited *Coalescence* (in this case, one person joining an existing group) and *Focused Interaction* (specifically the group’s ability to engage in Goffmanian “shielding” to maintain their privacy).

The larger point I take from this example is that one approach to the design of hybrid events is to reflect on the nature of group interactions – how a group signals that it is private, how group members indicate that an approaching person is welcome, and how the approaching person can perceive those signals – and the degree to which virtual participants have the capabilities to sense and generate those signals.

### Co-navigation: Being Introduced to Others...

Another example illustrates the inhibition of *Coalescence* and *Remixing*. In this example, a participant who was new to the AGM, said: “*The one thing I miss most, being a new academy member, is that [process of] walking around with someone that I’ve known from before who is an old-time academy member, and using that contact to get to know new*

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<sup>1</sup> We acknowledge that not all conference venues focus on promoting conversation, and that there are large-scale interactions – e.g., applause, standing ovations, standing in a long queue – that do scale.

people.” This co-navigation and introduction did not happen because of the technology limitations of avatars in virtual reality environments: it is not easy for two people to walk in synchrony, side by side, especially when navigating a crowded environment. At best such co-navigation is awkward and time-consuming. Such synchronized walking requires good peripheral vision and fine moment-to-moment motor control, even as the participants keep an eye out for others to chat with. It seems likely that a telerobot would have similar difficulties in engaging in such co-navigation.

## CHALLENGES OF VIRTUAL PARTICIPATION

Besides the challenges of engaging in sophisticated interactions when one’s sensory and motor abilities are limited by an avatar or other artificial representation, there are other more basic limitations of being a virtual participant.

### Projecting Identity

Identity is an important part of interaction in general, and conference attendance in particular. At the most basic, identity means being identifiable, which is crucial to connecting with others that one knows. In the virtual conference, informants agreed that they couldn’t recognize others by their avatars. This was not a big problem because avatars had their users’ real names floating over their heads, something informants found very useful. But even so, many users reported discomfort with their inability to significantly customize their appearances. Sometimes it was as simple as wanting to look sort of like oneself (e.g., balding, a bit pudgy and 50ish, as opposed to young, lean, and muscular, the latter being what the Second Life avatars defaulted to).

Other times people wanted to be distinctive either to make an impression (“*My avatar has blue hair and sparkly boots. ... That’s the kind of look I was going for.*”) or alternatively to feel appropriate (“*I just prefer to be in formal dress ... I think it’s just making the person more approachable.*”). And sometimes participants had larger goals, like wanting to ensure that their gender or ethnic identities were apparent: “*Sometimes you want to know how many women are here? How many <ethnics> are around here? That is hard to do in Second Life. And it’s important to do if you are trying to encourage broader representation.*”

### Being in Two Places at Once

Another general challenge of being a virtual participant is that of being in two places at once. Those who attended the AGM participated from their corporate offices, client sites, or homes. While a few blocked their calendars and closed their doors, most were visible and accessible. Sitting at their desks, talking into headsets, and working on their computers, they looked – to their colleagues and their families – just like they looked on every other day. Even if their calendars were blocked, interruptions still happened. “*If I’m going out of town it’s easy for me to say ‘hey, I’m going out of town so I can’t handle this client coming into my center and having a meeting.’ It’s expected if you’re in town and in your office,*

*that you don’t prioritize an Academy meeting over a client.*” The same is true in the personal sphere: a child can’t understand that Mom is ‘at a conference,’ and unable to provide a bedtime story, when in fact she’s sitting right there at her computer.

These demands of work and domestic settings manifested themselves in various ways, such as multi-tasking. One of the most striking effects we observed was the lack of after-talk interactions. In a face to face conference setting, after a talk or other event finishes, participants pour out of the room into the hallway, and the situation is well-suited to the coalescence of small groups with the event as an obvious focus for interaction. However, in the AGM, there was no such after-talk interstitial period. Instead, the avatars vanished, or went dormant, as their subjects turned their attention to email, missed phone calls, or face to face interactions. To the extent that the saying, ‘*The most important parts of the conference happen in the hallways and pubs*’ is true, the AGM participants missed an essential aspect of the conference experience.

## CLOSING REMARKS

In this position paper I’ve returned to a previous study of a large entirely-virtual conference, and tried to extract lessons that might inform the design and analysis of large hybrid events. *The basic take-away is that we need to pay close attention to face to face social interactions, the embodied capabilities that we use to produce them, and how to provide those capabilities to virtual attendees – or to compensate for their lack.* How do virtual participants join collocated groups (or gracefully depart from one)? How does a collocated group welcome (or warn off) virtual participants? How can virtual participants be recognized from a distance by those who know them already? How can virtual participants manage their presentation of self so that they appear to be appropriate and competent members of the interaction and the event?

On the other hand, some of the challenges of virtual participation seem less tractable. While we can imagine some ways to allow virtual participants to project their identity, it is difficult to envision a complete solution to this issue. We might be better advised to thin through the consequences of the failure to manage identity appropriately. Goffman’s book *Stigma: Notes on the Management of Spoiled Identity* [3], would make an interesting point of departure here.

Finally, I will note that this position paper really focuses on academic style conferences, and within that on the issue of connecting with and talking to strangers. Of course, conferences have other interactive challenges, and of course there are other large-scale events with different aims and hence different challenges. Nevertheless, I believe that a focus on the ways in which embodied social interaction is carried out, and the extent to which virtual attendees possess, or be provided with, the capabilities to participate or not, would bear fruit in many cases.

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