

We are Here and We are Many:

Using a Telepresence Robot for Shared Exploration and Learning (and Fun)¹

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Abstract

Mobile remote presence bots (MRP) have emerged as a potential way of addressing the 'tyranny of distance' when having to attend meetings at far away locations. In this contribution we report on how we used an MRP to share with two cohorts of postgraduate students at a regional university the formal 'conferencing' and the informal 'mingling' that takes place at quality academic conferences and that many would consider essential for effective networking and knowledge sharing. Simultaneously, students were able to experience and explore what it meant to be 'different' in a room full of people interacting in 'regular' ways, observing the conference attendees reacting to the MRP aka 'ipad on a stick' in ways from genuine interest to forced indifference.

Introduction

The use of mobile remote presence bots (MRP) has emerged over the past decade as a way of addressing the 'tyranny of distance' when having to attend meetings at remote locations. Within the limitations of what often looks like 'ipads on a stick' or 'skype on wheels' and may feel like "being a drunk tetraplegic with bad hearing and a weak voice" (Kniberg 2013; see also Rebola and Eden 2017), MRP have become reasonably reliable and responsive, even usable (Lewis et al 2014). Still rather expensive to operate they may be a cost effective alternative for businesses compared to direct and

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indirect costs associated with air travel, especially if travel can be avoided altogether during the COVID19 pandemic.

When the first author was afforded the opportunity to use an MRP to attend a leading academic conference in the USA from far away Australia we immediately thought about ways to incorporate this into university teaching and research. In particular we were interested in how we could share with regional university students the formal 'conferencing' and the informal 'mingling' that takes place at quality academic conferences and that many would consider essential for effective networking and knowledge sharing. We saw this as an opportunity to convey to students studying in remote locations the unique academic "knowledge sharing ecology" that unfolds at high quality academic conferences. The focus was to showcase the professional seriousness and also the fun, ranging from formal paper sessions to hands-on demos and the informal get-togethers over drinks and finger food. The opportunity to experience the networking that takes place between researchers near and afar and also the excitement that unfolds when spotting that key researcher whose work we have been tracking for months or even years was also invaluable.

There are a few reports in the literature discussing the use of MRP for conferencing (e.g., Kniberg 2013; Strickland 2013; Boll 2017; Rebola and Eden 2017; and Neustaedter 2020 for a broader perspective) but they focus on using MRP for individual attending and associated experiences. On the contrary, we used the MRP from the start for a shared journey and we actually set out to experience the good, the bad and the ugly. We utilised the activity itself as a teaching vehicle that would naturally raise questions about the nature of the (technology mediated) engagements that we were likely to experience.

Sharing the experience of the multi-faceted interactions at a conference

At that time we taught a combined undergraduate/postgraduate class on *Social and Cultural Issues in Interactive Digital Media* where we already had classroom discussions about topics including utopias, dystopias, virtuality, as well as post and transhumanism. For this class we considered the MRP a brilliant vehicle for a hands-on, interactive exploration of how other people would react to 'us' when embodied in this kind of technology even if it is just an 'ipad on a stick'.

For a postgraduate *Research Methods* class the focus and the intended learning outcome was a different one: a hands-on demonstration helping students understand how attending academic conferences facilitates rapid knowledge sharing by way of formal talks, interactive poster presentations, as well as hallway discussions.

We hooked a laptop running the MRP control software into the AV system of a lecture hall for all to see on the projection wall. The MRP we used was a 'Beam' by SuitableTech (suitabletech.com/products/beam).

Participation in those classes was announced to be entirely voluntary. Following an introduction by the lecturers and some initial cruising at the conference venue where we enjoyed meet & greets with fellow academics from Australia who recognized the first author on the MRP's screen, students were encouraged to take over the guidance of the MRP on the other side of the globe.

Not every student was keen to drive the robot but even those that did not were really quite excited about it. For those at the helm driving the robot it became something of a competition and challenges emerged like using an elevator. Taking turns and who is next became issues that students resolved amongst themselves.

When a conference attendee was speaking to the bot, the dominant face they spoke to was the driver until the other people in the classroom made themselves seen and heard. It was interesting to watch the driver then become aware of their position in the laptop camera view, shifting so that the rest of the class could be seen clearly on the screen.

Students who were not actively participating still saw how the robot received "unwanted attention" in the sense that other attendees took pictures of the "them" without asking. They also saw how some attendee physically grabbed the robot which was deeply irritating (cf Dreyfuss 2015). Reading about these things in scientific papers is one thing but seeing it happen to one's own remote body it is a very different experience.

Discussion

Overall, students encountered lots of positive experiences like the aforementioned encounters with fellow Australian researchers they would not normally meet (Melbourne and Sydney are 1-2h flights) and the very real participation in paper sessions and live demonstrations where presenters were particularly welcoming of the unusual visitor.

The opportunity-driven event also generated a lot of interest in remote presence among students with follow-up discussions about what was happening and several students becoming interested in researching the topic further.

The experience of being 'many' in the MRP was an entertaining exercise that fulfilled the purpose of allowing whole classes to 'beam across the world' to a conference they would otherwise not have had the opportunity to attend. It was also a successful attempt in identifying various usability issues for a future attempt.

Acknowledgments

We are grateful to the organisers of CHI 2016 for affording the opportunity which is btw the same conference that Boll and Rebola & Eden report on albeit from their own points of view. The first author was with the University of Tasmania when things happened.

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