Theatre through Zoom: Audience responses to *The Time Machine*

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Abstract:
As the coronavirus pandemic raged across the world, theatres were forced to adapt or remain closed. This paper explores the audience responses to a performance delivered through Zoom, which was originally produced as an immersive promenade production. Data were collected through an online survey distributed the day after the performance and interviews with respondents to this survey. Interviews were conducted several weeks after the performance. The study finds that, at least in the context of the pandemic, audiences welcomed the apparent 'liveness' of this performance. Although Zoom was not able to mimic all aspects of a live performance, it provided new experiences for audiences. Aspects of the technology were both enabling and discomforting for the audience, for example by enabling them to see into each other's homes, which some found intrusive. The study suggests opportunities to use technologies such as Zoom to reach new audiences, such as those unable to attend traditional theatres due to physical, psychological or financial barriers.

Introduction

Live broadcasting of theatre into cinemas has become part and parcel of theatre practice over the past decade. In the UK, this has been led by the NT Live and RSC Live, which broadcast to audiences via cinema to reach beyond national borders. Aebischer and Greenhalgh (2018, p.4) divide such broadcasts into three categories: 'Live' broadcasts where a live performance is captured and simultaneously distributed to remote audiences (the recorded performance may be 'delayed live' if time zones necessitate a later broadcast); theatre broadcasts where multiple cameras record a production (sometimes over several performances) with subsequent editing before broadcast; and recorded theatre where a production is captured live (perhaps across multiple performances) for later distribution (e.g. via DVD or for download). At least when distributed via cinemas, such performances ensure the audience is co-present with each other, if not with the performers. For recorded performances provided via DVD, such co-presence is not guaranteed. While there may be debate in the theatre world as to whether broadcast performances (whether broadcast live, recorded and broadcast or recorded and distributed) indeed constitute theatre, emerging practices are adopting technologies in ways which are more similar to traditional theatre. For example, using technologies that enable two-way interaction between performers and an audience, which situates the audience in the same temporal, if not physical, space. For Giannachi (2004, p.11) this has important impacts on the viewer who 'is able to become translocal', no longer being situated in only one location.

COVID-19 placed tremendous strain on the arts and culture sector around the world, with theatres shut for long periods of time. In the UK, the initial 'lockdown' resulted in theatre closures from at least mid-March 2020 until early August 2020. A brief reopening was followed by further shutdown of the sector in November 2020. This disruption caused cancellation and curtailment of productions and put enormous strain on the finances of the sector. Theatres responded to the forced closure in a variety of ways, from streaming previously recorded performances to developing new ways to deliver theatre digitally. It seems these efforts were welcomed by audiences: market research from the US suggests that over three quarters of theatre goers watched some online streamed content during the COVID-19 pandemic and that the majority (75%) enjoyed the experience (AudienceView & Theatermania, 2020), though, few have paid for this privilege. This paper explores the audience responses to one such attempt at delivering live theatre through Zoom.

In 2019 Creation Theatre was asked by the Wellcome Centre for Ethics and Humanities to create a piece of theatre that would engage the public with their research. Creation Theatre were already set to return to the London Library to stage an adaptation of HG Wells' *The Time Machine* in February 2020 and this seemed like an opportunity to incorporate the Wellcome Centre's research, given that a key aim of the Centre is to address ethical issues for the 21st

Century and a world rapidly changing due to technological advances. Thus, Creation Theatre set about creating a radical re-imagining of Wells' Sci-fi classic, as an immersive promenade performance around the Library. This production was developed through interviews with researchers from the Wellcome Centre, which enabled the playwright to draw the Centre's contemporary research into the production. The production explored a post-apocalyptic fragmented world, showing the after-effects of a global SARS-like pandemic, climate change and time travel leading to catastrophic threats to humanity. *The Time Machine* opened in early March 2020, just as growing numbers of COVID-19 cases were confirmed in the UK. On 11th March the World Health Organisation declared COVID-19 a pandemic and the production closed along with the rest of the UK Theatre Industry on the 16th March. It is important to recognise that the London Library performance was developed before the emergence of the pandemic.

Creation Theatre pivoted rapidly to online work with a co-production of *The Tempest* with Northern Ireland's Big Telly Theatre Company, which was performed on the video conferencing platform Zoom within three weeks of lockdown. The performance sold out instantly, received critical acclaim from The Guardian, The Financial Times, The New Work Times and BBC Front Row. A report was funded by the AHRC into Creation's Digital Transformation and the company found themselves at the forefront of digital work produced in lockdown (Aebischer and Nicholas, 2020). With the performers for *The Time Machine* still under contract for a re-mounting of the piece in Oxford, the decision was made to follow on from the earlier successful Zoom production of *The Tempest* and to re-create the show as a piece of digital theatre. Edits were made to the script to tone down some of the material relating to pandemics, given current world events as it was felt this might cause too much distress for an audience that was, at the time, experiencing an uncertain pandemic. The revised script ran at just over 1 hour. Reflecting the intention of the original piece, audience sizes were kept small. Break out rooms were used to create a sense of unique audience experiences and to provide a way for the audience to choose which ending of the performance they would like to see.

Artistically the transition to digital opened up new possibilities, with virtual backgrounds providing a clearer more vibrant way to represent time travel than could be achieved in the Library. Cast members performed from home in front of green screens, and moments of pre-recorded material were mixed and layered over the live experience.

Literature review

There is much discussion within the literature about the nature of broadcast theatre productions (e.g. simulcast productions in cinemas which have grown in number since their inception by the New York Metropolitan Opera in 2006 (Barker, 2013)), and whether such productions truly afford an experience similar to live theatre (Zhou, 2021; Sullivan, 2017,

2018; Barker, 2013). While theatre producers may be seeking to reproduce a facsimile of a live theatre experience, audiences remark on the differences. This begs the question as to whether there is something unique about participating as a member of the audience in a theatre and raises questions about the nature of 'liveness' in a theatre context. The emergence of live broadcasts thus raises questions about the nature of the audience experience, and how remote audiences experience theatre. Zhou (2021) questions the term live when applied to recorded performances delivered not only at a spatial distance, but which may also have been delayed by hours, months or even years. We argue that live theatre presented directly into people's homes (where the audience is not only not co-located with the performers but is also not co-located with each other, such as the performance of *The Time Machine*) raises new questions about liveness and what it means to be part of an audience. How might we conceptualise 'liveness' in such situations?

Constructing liveness

Auslander (2008) argues that we can only understand the nature of live performance by considering its historical and cultural origin. He argues that liveness arises only as a counterpoint to recordings, and emerges as a concept only in the 1930s at the point when recording technology becomes of sufficient quality. He suggests that "[t]he default definition of live performance is that it is the kind of performance in which the performers and the audience are both physically and temporally co-present to one another. But over time, we have come to use "live" to describe performance situations that do not meet those basic conditions" (Auslander, 2003 p. 60). Challenges to definitions of 'liveness' in a theatrical context include live broadcasts and other forms of digital theatre that bring together an audience temporally though not physically, or physically with each other, but not the performers and not necessarily at the same time as the performance physically occurred. Way (2017) argues that streamed live productions 'challenge how audiences experience the inventiveness of performances, eschewing the physical presence of audiences that commonly denotes liveness and instead emphasising the audiences' temporal presence' (p. 401). Zhou (2021) however, notes that this experience is different for the three types of audience he defines for NT Live: those who are co-present with the actors, those who experience a cinema simulcast and those watching a delayed screening. For Zhou, these latter two audiences must lose some sensorial experience, not least through the loss of three dimensionality in the mediated performances. At the same time, Cochrane & Bonner (2014) remind us that cinema audiences may be offered new experiences, not available to those in the theatre, such as interval interviews, close-ups and backstage insights, which as Wyver (2015, p.297) points out are designed to 'offer the cinema-goer privileged access to aspects of the production process and interpretation of the staging that they might otherwise not be able to access'. However,

Wyver (2015, p.297) also remarks that such affordances are not universally welcomed with a vocal minority preferring 'the broadcasts to be plain and unaccompanied'.

Increasing reach, by way of making performances available to those geographically distant from the production company or through lowered cost of tickets in cinemas, was one reason that companies like the Royal Shakespeare Company (RSC) moved into live streaming (Wyver, 2015; 2019; Aebischer, 2020). Way (2017) and Barker (2013) question whether or not live streamed performances reach audiences who are not already invested in theatre and the arts – one of the arguments that has been put forward by arts organisations for simulcasts. However, there is some evidence that there is a more diverse audience for events that are streamed, versus live or event cinema theatre (Reidy, 2016). Whether they truly reach new audiences or not, broadcasting theatre in cinema does increase audience reach for any given production, allowing more seats to be sold (Bennett, 2018) and allows performances to reach beyond national boarders (Zhou, 2021).

Barker (2013; 2016) identifies aspects of 'liveness' including: copresence between performers and audience, direct engagement without intervening (technological) mediation, a sense of interaction with performers and other members of the audience, an element of risk (that the outcome is not guaranteed), the opportunity for the audience to affect the performance and the sense of community. However, in our increasingly digital lives, Sullivan (2018) suggests that this sense of community can be created using social media, in essence creating digital co-presence by discussing and experiencing at a distance. Social media, then allow audiences 'to connect with one another online and create new kinds of experiential aliveness' (Sullivan, 2018, p. 62), an aliveness that offers new affordances, such as the ability to debate with each other *during* the performance (without disturbing those seated next to you). As noted above, 'live' broadcasts may be transmitted simultaneously with an 'in theatre' experience, or shown with a time delay. Both these types of performance meet Phelan's (1993) criteria for liveness that it be ephemeral and exclusive. Such performances honour 'the idea that a limited number of people in a specific time/space frame can have an experience of value which leaves no visible trace afterward' (Phelan, 1993, p. 149). This exclusive element of liveness may grant audience members attending a live show a degree of social prestige (Meyer-Dinkgräfe 2015). Thus, 'the word "live" carries the cachet, the key to the promise of the distinctiveness of the cinema experience' (Cochrane & Bonner, 2014). Barker (2016) argues for a concept of 'aliveness' comprising the experience of surprise, experiencing performance through the whole body (a cross-sensory experience), experiences that have a rhythm (with highs and lows that can be expressed by the spectators), experiences that are both sensuous and intelligible (emotional and cognitive), a merging of the message and medium, and conditions required for concentration.

Wyver (2014) and others (e.g. Sullivan, 2017) have argued that one of the goals that theatre producers might seek in delivering live streamed productions is to remove the evidence of

mediation, making the audience feel as though it is indeed in the theatre. Thus, the technology becomes invisible or at least is not what draws viewers' attention. Nevertheless, Cochrane & Bonner (2014) point to the important role of filming within broadcast performances, highlighting that the choice of camera angle and shot limits the experience of remote audiences to that of the camera eye, an issue also raised by Wyver (2015). Aebischer (2020) unpicks the ways in which the cameras themselves become actors, guiding viewers responses to the performance. For Aebischer the question becomes not one of how the camera restricts audience agency, but rather how the camera 'performs an emotional response to the scene for the benefit of the cinema audience' (p. 197); the camera becomes a performer to which the audience responds. As intermedial performances the role of technology, whether as tool to deliver the performance, as a means of enhancing experience, or indeed as Aebischer (2020, p. 180) argues as an 'interpretive tool' is worth considering. Davis (2012), for example, questions the role of technology, suggesting that the technology used in performances in various ways may captivate the audience (i.e. draws their attention). Although Davis is referring to technology adding to live performances, this question of captivation (and associated distraction) may be pertinent in contexts where the platform (e.g. Zoom) or other aspect of the delivery technology becomes prominent. Raising questions around the role of such technologies in creating a sense of liveness or enabling audience agency.

Audience research has been referred to as 'the Road less travelled' (Freshwater, 2009, p.27). And, as Barker reminds us, this is particularly true of the audience experience of digitally delivered live performances, arguing that 'responses are regularly *imputed* to the audience', a fictive image commonly at work in cultural debates. This is therefore not about discovering what audiences may do, but about saying what they ought to do, or need to do (Barker, 2013, P. 20). From the work that has been done with audiences, we can see that 'live-to-digital' or simulcast performances are not seen 'as a replacement for live, but as a distinct experience' (Reidy et al., 2016, p.12). Reason (2004) argues that there is a need to consider 'presentness' when considering live performance, suggesting that audiences identify a sense of liveness as central to the experience of theatre. Others have argued that some form of collective engagement or collective experience is seen by spectators as an integral part of the theatrical experience (Rodbourne et al, 2010; Brown and Novak, 2007, Independent Theatre Council, 2005), though collective experience may be less important to audience evaluation of theatre than factors such as emotional and cognitive engagement (Tung Au, Ho and Wing Chuen Chan, 2017). Other aspects thought to be central to 'liveness' include shared memory, awareness of the human performer and a sense of being part of an audience (Reason, 2004), while Barker (2003) adds immediacy and risk (in the sense that every performance could be different). In the context of digital theatre, Davis suggests that 'when feedback is received

and responded to in real time (or close to it) a sense of liveness and immediacy may be achieved even when participants are not co-present' (Davis, 2012, p. 510).

Although limited, there is beginning to be some empirical work exploring audience experience of simulcast performances. Barker (2013) found that the audience is highly appreciative, though he suggests that this may also be partly a response to the novelty of the experience. Amongst audience concerns, there were a range of technical issues (breakdowns and streaming), performance specific issues and issues related to the nature of a streamed performance (for example criticisms of camerawork, which tend to limit the viewers option as to where to look, though the use of close-up camerawork can also be seen as an advantage). The lack of ability to look where you want was one of the main criticisms identified in Barker's work. Barker articulates this as the need among some audiences to use their own expert judgement as a key feature of liveness.

Audience participation

While many digitally-delivered performances may not require any audience participation, the particular performance explored in this paper did invite participation from the audience. Thus, it is useful to think about the nature of agency in relation to audience participation. White (2013) defines audience participation as 'the participation of an audience, or an audience member, in the action of a performance' (p. 4). In the context of one-on-one performances, Heddon, Iball and Zerihan (2012) highlight the importance of intimacy in constructing the performer-spectator relationship, which they argue has 'perceived value [which] hinges on the seeming authenticity of exchange, on the engendering of a relationship between performer and performer-spectator' (2012: 121).

Breel (2015) highlights the particular nature of the audience for participatory productions where the audience plays a 'crucial aesthetic component … as the responses and actions of the participants become part of the fabric of the show.' (p. 369). Breel refers to four different types of audience involvement: interaction, where the audience is asked to contribute at specific predefined moments; participation, where the audience plays a central role in determining the outcome of the work; co-creation, where the audience creates specific elements of the work; and, co-execution, which involves the audience in executing the final work. However, Breel argues that audience agency rests with the audiences' response to the offer of agency, not with the offer alone.

Methods

This study set out to explore the audience experience of *The Time Machine* as performed by Creation Theatre and delivered through Zoom. This production provided an opportunity to consider the experience of the audience attending performances in their own homes. A survey was carried out using Qualtrics to explore audience experience. The survey was

distributed by Creation Theatre after each performance. People wishing to join the performance booked a 'screen', which means they were sent a Zoom link that could be used for one device. However, any given 'screen' could be watched by as many people as could reasonably see it. In practice this means that many participants watched in family groups and so each individual screen represents more than one audience member. There were a total of 41 performances, and 1146 screens were booked. A total of 230 survey responses were received. Of these 18 were completely blank and were removed from the data set. Of the remaining 212 responses, 12 respondents only completed the first few questions, and are therefore not included in the data presented here, leaving a total of 200 completed surveys received. As noted above, since each screen may represent more than one individual, the number of screens is not representative of the total audience. Further, the way that the survey was distributed means that although we know how many screens were bought, we do not know whether the purchaser passed the survey on to another household member who watched at the same time. Nevertheless, we can estimate the response rate at 20% for those starting the survey, and 17% providing usable data. Respondents are referred to in the data below using the following nomenclature: R followed by survey number (e.g.R1, R18). Data for the qualitative analysis of audience experience is drawn from the following open questions included in the online survey: what ethical issues stood out for you in the performance of *The Time Machine*? And, please add any other thoughts you have about seeing this performance using Zoom.

In addition to the open questions from the survey, semi-structured interviews were conducted with audience members. Interviewees were recruited from the pool of people who had responded to the survey and indicated that they were willing to be interviewed, and who left a contact email. In selecting people for interview, we sought to recruit people representing a range of ages, balance of gender, and with as varied as possible an experience of both theatre (as indicated by how frequently they attend theatre) and experience of the Zoom production (e.g. to capture technical challenges). It was challenging to achieve these latter two aspects as the people willing to be interviewed tended to be frequent theatre goers and enthusiastic about Zoom.

In total, 25 people were contacted with a request to participate in an interview, of which 12 responded positively. Eleven interviews were completed, comprising 12 individuals (one interview involved two individuals, denoted 7M for male and 7F for female). In total, seven females and five males were interviewed. Interviewees are quoted in the text below using the nomenclature: interviewee followed by participant number (e.g. Interviewee 1).

Results: Emerging themes

Feeling part of an audience

Attendees felt as though they were in the same space as other members of the audience, but also paradoxically entering individual personal spaces. 'I very much enjoyed watching the other members of the audience at the times when we could all see each other, because that made it feel so much more like it was a performance rather than watching these, you know, National Theatre online or whatever, where you're just sitting and watching something that's been filmed. Which might as well just be on Netflix.' (Interviewee 10). They had glimpses into other people's rooms, watched their cats, their children, their interactions with each other, looked at what they were wearing and watched them eat cereal. 'You feel you're there in the same space with them as it were, even though you're all in your own rooms. And then occasionally it was quite interesting to get a glimpse of other members of the audience in their front rooms.' (Interviewee 3). Some audience members found this reassuring, as though they were sharing the experience with others, they were able to look for friends or relatives in the same way that they would if they attended a physical local live performance. However, others found it distracting and disconcerting and wished they had switched the feature off. 'Sometimes, instead of looking at the actor or actress, I looked at some of the people watching it, you know, at home, which was irritating. It was distracting again from a very intense play.' (Interviewee 7M). There was also a level of insecurity about being seen on the screen and some attendees would have liked the opportunity to meet and greet other audience members, as you would in the lobby of a theatre. They were self-conscious about being seen, and not being hidden in a darkened room as they would have been at the theatre. These concerns about being seen were also highlighted by survey respondents, who 'didn't want to be on show for others to see, we spend all day on Zoom at school and work and would rather have watched a show to entertain us'. (R9) It seems that attending the performance at the same time as other audience members and being able to see these audience members creates at least some sense of co-presence with others that is absent when watching a live (or recorded) performance at home with only your household. However, for some in the audience, this co-presence was disturbing, either because it was distracting to see other audience members or because they felt their own privacy was invaded.

While audiences very much welcomed the opportunity to experience live theatre during the lockdown and were generally very positive about Zoom, participating in theatre through a digital medium like Zoom is different from attending a live performance in a theatre. Respondents pointed out that performances using this type of technology are not able to mimic aspects of live performance: 'If you are in an auditorium you are with other people. So that whole experience you have, you've feedback from the audience, whether it's a big sigh or it's a quietness, it's a stillness, or there is laughter.' (Interviewee 1). Although there was this sense of co-presence, it was a muted experience, one which lacked the physicality of attending a performance with other bodies in the same space.

Zoom versus live and recorded live performances

Both interviewees and survey respondents preferred the experience of participating in the Zoom performance of *The Time Machine* to that of watching a recording of a theatre performance, where they felt more passive as there was no interaction with the actors or other audience members. 'You did feel more involved than you did when you were just watching an ordinary recorded theatrical show.' (Interviewee 8). Zoom enabled interaction between the actors and the audience in a way that pre-recorded performances do not. 'You felt that you were being talked to deliberately as an audience member which is very similar to what would happen if you were on the stage.' (Interviewee 1). For one survey respondent 'it was almost better than being in a live audience as the actors knew my name and could draw out certain people into the performance.' (R44) This type of interactive online performance was seen as a good middle ground between attending an actual performance in a theatre and watching a recorded version. 'I actually find it quite tedious watching a staged play filmed, even if it's in front of a live audience, it's like a disconnect for me.' (Interviewee 10). It also meant that the performance was able to capture what was live and unique with all the associated risks of a physical performance; the feeling that something might go wrong or happen that only that audience on that day would see. 'It's definitely a great idea to do it live and all the risk that comes with that, you know, internet failing, access to faces…it's happening now. It could go wrong.' (Interviewee 2). This is partly what made it live for people, the anticipation of the performance, setting the alarm, getting snacks and drinks ready, knowing that other people are experiencing it at the same time. The feeling that this performance was only happening once and only for them, in that room on that occasion at that time. 'You only get at live performances in that, you know, it only ever happens once when you're there.' (Interviewee 8). For these spectators Zoom was able to create a sense of 'liveness' that Aebischer and Greenhalgh (2018) suggest 'recorded' theatre cannot. As our respondents did not indicate familiarity with live streamed theatre (i.e. in a cinema with other audience members), the relationship between these other ways of experiencing theatre at a distance relate to each other. Nevertheless, it is clear that theatre through Zoom is able to recreate many facets that have been attributed to live theatre, including: feelings of co-presence with actors and audience (if only in a temporal sense), risk and a sense of uniqueness or exclusivity.

Although they felt they were being talked to deliberately and felt more involved, as they would have at the theatre, many audience members highlighted that the performance missed the non-verbal communication which would be happening on stage. 'There's so much missed from it, you know, so much communication and storytelling is done in the non-verbal.' (Interviewee 2). There was a feeling of being out of control and not being able to watch other parts of the 'stage' or performance in the same way they would have done in the physical space. 'I can't decide where I want to watch, the camera man decides for me, and I really

don't like that.' (Interviewee 8). Further, you couldn't see how the characters were reacting who were not centre stage at that time in the play. 'There's a lot more going on than you can necessarily capture with, with a single camera, I suppose there's more than one camera, but even, it will always be a single shot at any one time.' (Interviewee 7F). The choice to focus on the periphery had been removed, by the focus of the camera being on the person speaking at that time rather than on the whole 'stage'. 'On Zoom you're really only looking at the person that's speaking whereas in theatre, your view is of the whole stage. So, people who are non-speaking, you can see what they're doing as well.' (Interviewee 3). This was a particular challenge for a performance taking place in 'lockdown' when the actors also were confined to their houses and therefore acting with each other at a distance. Technology may have facilitated the performance, but it also meant that the audience lost some agency; no longer could they choose where to direct their gaze and this diminished the experience for them.

The technology itself was also a distraction for several respondents. Respondents from the survey highlighted a number of issues with Zoom. These included technical challenges such as problems with sound, speech distortion and issues with chroma keying[1]. The novelty of a Zoom performance was also a distraction for some: 'I honestly could not tell you what the play was about. I thoroughly enjoyed it but was thinking about the technical expects "how did they do X, Y and Z"' (R72). Innovation was welcomed and technical glitches will likely improve as technology develops. However, the final point, suggests that it may take audiences themselves some time to adapt to technology so that they are not distracted by the novelty itself.

Interactivity

The audience felt that Zoom enabled the theatre company to produce a performance with a high level of interactivity. The actors were praised for engaging directly with the audience, not only through asking questions of the audience, but also through eye contact, which was recognised as challenging. 'Their eye contact was very good. I'm very aware that I'm talking to you and I'm looking at your image rather than looking at the camera and my eyes sort of glance downwards. But they seem to get it very, very well.' (Interviewee 1). There were also interactions with the audience. For example, when moving between time periods in the play, the audience were asked to carry out actions. These interactive aspects were important for some and disliked by others. 'I didn't expect to be so immersed but I really was. The use of a computer really helped to pull me in. The audience participation parts were really fun,

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[1] Chroma keying allows a green screen background to be replaced by an image. Distortions can arise around the edges of the actor, making it obvious that this digital background has been applied.

although I was very nervous beforehand about the idea of participatory theatre.' (R170) The use of breakout rooms and audience choice also aided engagement in the narrative: 'the end, the bit where you choose whether you go into this room and commit or walk away, that was like, Oh my God, that was so intense.' (Interviewee 6). The final breakout rooms were seen as a positive extension of the narrative, providing the opportunity for members of the audience to follow different narrative lines. This element was not seen as a positive feature by all however: 'My husband realized that … the actors could see you, and they were going to involve you. He was very uncomfortable.' (Interviewee 8). Clearly, participation is not for everyone. Yet live performance through Zoom was able to recreate interaction between actors and spectators that is not possible with streamed performances, at least in part because the audience knows they are visible to the actors as well as each other. This raises the expectation that you participate and may go some way to creating a sense of community amongst these spectators at a distance. Technology may also open up new ways for audiences to participate, such as through the use of breakout rooms that may challenge further our notion of 'the audience'.

Accessibility

Zoom was seen as enabling potentially beyond the period of COVID-19 induced lockdown, increasing the accessibility of the performance to those unable to attend a physical performance either due to disability or circumstance. Suggestions were made that such technology would enable access for people in prisons and residential care homes. 'I think for people who can't get to theatre or who have disability, there's limitations on access or wheelchair access, I think it's great that this is now an opportunity.' (Interviewee 1). There was a strong feeling amongst interviewees and many survey respondents that lessons could be learned from this type of live online theatre, that it should be developed further and not just be used during the pandemic. For example, this approach could be used in schools with students who are unlikely to visit the theatre unless taken by the school, which can be financially prohibitive. 'If kids can see on a larger screen, and it could be brought to them, it could be just as exciting.' (Interviewee 1). There was a recognition that theatre tends to attract the same types of people and maybe this type of performance might open theatre up to a broader audience, for example interviewees commented on the number of young children, who may not normally go to the theatre, but were watching as part of the family group. 'I was very aware how many young children were in that show, sat at home, cats as well. And that very much changes what theatre is.' (Interviewee 2). The performance also enabled people to watch with friends and family who may not normally go together or who are at a distance from each other. 'I was down in Brighton. My daughter was in Lewis and my son was in Solihull. And I bought them all tickets. So we could actually be together on my birthday.' (Interviewee 1). A survey respondent stated 'without Zoom this play would not

have allowed me to enjoy it in South Africa!' (R47) while another 'was delighted to see my son watching who lives in the Emirates' (R51). For some respondents, Zoom was seen as offering ways to come together with family and friends who could not easily be physically co-present; something that might be valued even when theatres reopened. Using a widely available platform such as Zoom, may also allow truly global reach (subject to internet connections and marketing constraints), and may also enable those who are housebound to enjoy cultural activities. Whether this could really extend to institutional facilities, such as police or residential care, remains to be seen.

Pandemic particularities

Since *The Time Machine* was developed through collaboration with researchers at the Wellcome Centre for Ethics and Humanities, it drew on a range of research carried out at the Centre; from ongoing work exploring the implications of global pandemics and vaccine scepticism, to the ethical problems associated with the history of human enhancement and its consequences for the future. As such, the play dealt with a range of prescient ethical issues relating to science and technology, including a potential future pandemic with global ramifications. The irony of this play having been written before COVID-19 and affected by COVID-19 and moved from live physical theatre to live digital theatre during lockdown was not lost on the interviewees. 'There's this line, I'll misquote the line, but imagine a world where you look up at the sky and there are no contrails[2] and I'm thinking, yeah, that's now I don't need to imagine that.' (Interviewee 2). For many this made the experience much more powerful. 'I think it was heightened by the fact that being in the midst of COVID where everything was upside down and there were things about the air pollution improving because planes had stopped. So, there was that promise of a possible change, a call to arms being met. But then there was also the feeling of powerlessness because I was in stuck in the house.' (Interviewee 4). However, as R54 stated, not all participants were expecting this performance to be quite so close to the issues they were facing in the pandemic. This respondent felt it was necessary 'to make this [ethical/pandemic related content] clear in advertising ... [as it could have been difficult] for anyone struggling with lockdown and looking for entertainment as a distraction.' (R54) It should be noted, that the theatre company did provide a warning in all their marketing materials about the challenging nature of the subject matter. [3] These

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[2] Air travel was one area of life greatly disrupted by the COVID-19 pandemic. Few passengers meant a significant reduction in flights and as a result few contrails in the skies overhead.

[3] The following was provided on marketing material for the event: "This experience is recommended for humans age 12+ We will be travelling through time and facing prescient and at times challenging ethical considerations about the future of humanity. If you do not wish to engage with these topics we advise you do not join the call."

pandemic peculiarities underpin audience responses to this production, perhaps causing greater resonance that had the production focused on other topics.

Discussion

In this section we return to explore two key questions: what does 'liveness' mean in the context of theatre presented through Zoom and how is this type of theatre different or similar to live broadcast theatre?

Liveness in a Zoom context

Core facets of liveness are debated in the literature, key among them is whether actors and audience need to be physically co-present. Zhou (2021), for example, suggests an ambiguous position for audiences attending recorded live broadcasts that may be transmitted at some point after the production has closed. Even when watching a simulcast, the cinema audience has little opportunity to affect the performance, something which Barker (2013) argues is an important facet of theatre. Our interviews suggest that live theatre through Zoom is able to overcome these issues, with the audience reporting a sense of co-presence with both the actors and other spectators, even though they were not physically in the same space. For some, Zoom clearly facilitated that feeling of co-presence and being part of the community participating in a cultural activity; as suggested by Reason (2004), Brown and Novak (2007) and Radbourne et al. (2010), it provided a sense of collective experience. This suggests that the temporal aspect, of theatre occurring as you watch, was an important aspect of liveness for our interviewees.

Theatres, as public spaces, have a different cultural resonance than do our homes. Participating in a theatrical event in home was difficult for some, particularly as this production encouraged audience participation. There is the opportunity to turn this feature off enabling those who wish to keep their homes private to do so. However, it does mean that aspects of this co-presence were disturbing; both in terms of distracting viewers from the performance (while they gazed at other people's living spaces) and at times making them feel self-conscious (as the theatrical gaze might be turned on them, rather than the actors). Thus, theatre through Zoom challenges our understanding of who the performers are, drawing spectators into the performance directly and often without warning. Breel (2015) remarks that audience participants become part of the fabric of the show, and this was clearly the case when the 'camera' shifted to focus on audience members at certain points in *The Time Machine*.

Nevertheless, the sense of co-presence through Zoom is a muted one; interviewees report missing the other sensorial experiences of being co-located with other spectators and with the actors. Barker (2016) argues that a key feature of liveness is the ability to experience the performance through your whole body. Our respondents highlighted the missing physical

presence of the audience, indicating that they missed bodily sensations such as stillness and laughter. The absences highlighted by our interviewees are different to those observed by Zhou (2021), who focused more on aspects such as three dimensionality and interactions between spectators and actors. This may be partly because Zoom was able to facilitate interaction between the actors and audience, which at least some respondents felt was similar to the interactions you would have in a physical theatre space.

Risk (Barker, 2013), ephemerality (Phelan 1993) and exclusivity (Phelan, 1993; Cochrane & Bonner 2014), also contributed to our interviewees sense of the liveness of theatre through Zoom. Interviewees reported having a sense that things could go wrong (both technically, e.g. Internet issues, and performatively), that they were experiencing something that would only happen once – other performances would be subtly different. In this sense, Zoom was able to create a sense of occasion (created through risk, uniqueness and exclusivity) that, as Aebischer and Greenhalgh (2018) argue, recorded theatre may not achieve. In this sense, theatre through Zoom may achieve a greater sense of 'liveness' than recorded and broadcast theatre.

Zoom, simulcast and recorded theatre

Although our respondents welcomed theatre through Zoom, they did so with an understanding that such performances are not the same attending in a theatre. Many of their criticisms are similar to those put forward for live broadcasts. As suggested by other researchers (e.g. Cochrane & Bonner, 2014), some audience members recognised their loss of agency. Cochrane & Bonner (2014, np) argue that this ability to 'compile his or her own edit of the proceedings' is 'the primary virtue of the live experience'. Our respondents missed this agency, wanting to see the reaction of other characters as much as to choose where to let their gaze fall. Thus, what Cochrane and Lawrence (quoted Cochrane & Bonner, 2014) refer to as 'rights of reception' are denied. Cochrane and Bonner (2014) also highlight the important role of the camera in recorded theatre, suggesting that choice of shots limits the audience experience. Aebischer (2020) goes as far as to argue that the camera becomes a performer, directing the audience gaze and this was certainly true for theatre through Zoom, and perhaps more so when the actors themselves are not co-located. Thus, respondents felt a loss of agency – they were not able to create their own unique experiences by choosing where to cast their gaze. Instead, behind the scenes (invisible) technology operators chose who was visible. This lack of audience agency emerged as one of the main criticisms of theatre through Zoom.

As observed by Davis (2012), the technology itself became a distraction for some audience members. This arose in two ways, either as technical difficulties (internet issues, speech and visual distortion) or as captivation (trying to work out what was going on behind the scenes, how was the performance actually delivered). Innovation was welcomed and these technical

glitches were often overlooked, but as with many innovations it may take some time for audiences (and theatre companies) to work out how best to use the technology. In any case, in the context of Zoom, the technology is integral to the performance. This contrasts with many live broadcasts where producers actively seek to remove any sense of mediation (Wyver 2015).

Wyver (2015; 2019) has argued that broadening reach is one of the key reasons why companies such as the RSC have moved into live broadcasts. Our interviewees see performances through Zoom offering even greater opportunities to widen access. Several commented that Zoom enabled children to join in a family theatre experience, which they felt was more challenging in theatre spaces. Others highlighted the potential of such performances to reach those who are housebound or unable to attend theatre for other reasons.

Finally, it is worth pointing out that *The Time Machine* dealt with issues related to the pandemic. The original intention had been to create a live performance that enabled audiences to engage with research being carried out at the Wellcome Centre for Ethics and Humanities, which happens to include research on risks associated with pandemics. It is unclear how the nature of the show and its similarity to unfolding world events may have affected audience responses. It is certainly the case that the timing of the performance and the fact that it occurred when theatres were closed is likely to have affected the way the audience viewed the performance and the technology employed in delivering it.

Conclusions

Theatre through Zoom offers insights into what liveness means for digitally mediated theatre. By drawing on the affordances of the technology, Creation Theatre wasable to create an experience recognised by the audience as live, though the interviewees also noted differences with live and recorded theatre. In many senses this performance created an audience experience that was, as Giannachi (2004) suggests, 'translocal'. That is, the spectators were in their own homes, watching a performance, but at the same time present with the actors (also in their own homes) and other audience members. Through use of a technology that facilitates audience participation, some of the facets of liveness that may be lost through simulcast, can be recreated, including elements of audience participation. This creates opportunities for actors to respond to their audience, something which our interviewees assert is important for live theatre (and missing from live broadcast). Although not physically co-present, the opportunity to see other audience members did create a sense of community; something that could be developed further through the creation of a virtual foyer.

Future studies might explore how the audience felt during the performance and the extent to which performances using technologies like Zoom are able to create cross-sensory experiences. It would also be interesting to explore whether or not participating in a

performance using such technology provides the necessary conditions for concentration, especially given that when in your own home you may be tempted or distracted by other technologies (e.g. phones) which might not be acceptable to use in a traditional theatre space. Thus, questions remain as to how performances delivered using this type of technology changed the nature of being an audience, potentially opening up the space for new rules and new behaviours. The audience responding to the survey and interviews had relatively little experience of this type of performance, though some had attended similar digitally delivered theatre events. The norms of how you behave as an audience (whether you use your phone, whether you keep your camera on) are likely still developing, given the relative newness of this technology to most potential audience members.

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Appendix:

Time Machine Audience Interviews Guidance:

Interviews should be very open and allow the interviewee to set the agenda in relation to what is discussed. Ideally, elicit stories that are about their experience of the performance (what is it like to be a member of the audience for this type of digital performance, how is this different to more usual live performances). Also elicit stories about what they have done after the performance. It may not be necessary to ask the prompts depending on how the interviewee responds, but they are there as guides for areas to probe.

1.   Please can you tell me about your experience of the performance of *The Time Machine*?
Prompts:

a.   What did it feel like to be part of this audience?

b.   How did this experience compare with being part of a live performance?

i.How captivating was the performance compared with a live performance?

ii.How did you perceive your relationship with the actors compared with a live performance?

c.   Have you attended anything like this (a digital, live performance) before? If so, how did the experiences compare?

2.   What aspects of the story stood out for you in the performance?

a.   Was there anything you found surprising or unexpected in the performance? If so, please describe it?

i.What surprised you about this?

b.   Were there any aspects of the ethical issues discussed that stood out for you or which you found particularly interesting or thought provoking? If so please elaborate?

i.Has your thinking about any of these issues changed in any way?

c.   Have you explored or discussed these issues further? If so, how/with whom?

3.   Please tell me what you think about theatre as a place for discussing ethical issues relating to developments in science and technology?

Prompts (try to dig a bit into the ideas underpinning their response)

a.   Please can you elaborate further?

b.   Can you tell me about any examples that you have found particularly powerful?

c.   Do you see a specific role for theatre in this area? If so, what?

i.How do you see theatre as different from other ways that you might encounter ethical issues relating to science and technology?

d.   Do you see particular challenges arising from such forms of theatre? If so, what?

The following question was used as the source of data from survey respondents:

1.   Please add any thoughts you have about seeing this performance using Zoom.