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# Exploring HCI's Relationship with Liveness

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**Abstract**

Liveness has long been a valued quality of mass media presentation in areas such as music, sports and debate. The rapid development of new digital media, and the interpenetration of these media and staged performance, places liveness center stage in attempts to understand emerging human-computer configurations. This workshop will bring together insights from a variety of disciplines and perspectives to explore how HCI can benefit from critical engagement with theoretical and practical treatment of liveness. To seed discussion and action, participants will engage reflectively with the liveness of an authentic performance, experienced firsthand and at one-remove through a mediating technology, using an innovative video-based methodology.

**Keywords**

Design, digital arts, experience-centered design, expressive interfaces, liveness, performance

**ACM Classification Keywords**

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

**General Terms**

Design, human factors

## Introduction

Liveness, the properties of intimacy and immediacy experienced by both spectators and performers, is seen as an essential value of many art forms. This sense of spectators' proximity to and even inclusion in the performance of a piece of music, theatre or live art has been keenly sought after ever since the birth of recorded music and film. From simple measures such as augmenting a live recording with sounds from the audience to the close-up camera angles employed in televised live sport, configurations of technology have been used to heighten this sense of presence and involvement in events, which might be dislocated in terms of both space and time.

With the advent of digital media, new forms of performance and uses of technology bring into question the definition of liveness as a concept forged entirely from co-location and co-presence and force us to consider the effect of mediating technologies on our experience of *being there* [1]. Laptop musical performances, for example, are often reported by audiences and performers as feeling *less live* than more traditional concerts [7]. While both laptop and traditional performances are acts of creativity co-located with an audience, the differing qualities of interaction with technology result in a disparity in the way that this creativity is communicated, and hence experienced, by the audience.

Legibility, ambiance, improvisation, feedback, experience of participation and uniqueness might all form part of a definition of liveness, which extends beyond notions of presence alone. HCI can contribute to the design of interfaces for live performance through critical reflection on these qualities and the

development of methods and innovative interaction techniques. The relevance of liveness in HCI extends beyond the boundaries of media performance. Video conferencing, online and co-located multiplayer gaming and social networking all hinge around the user's sense of involvement in a shared moment. By examining aspects of liveness in performance, we hope to develop insight into these subtle dynamics of experience, and innovative ways to design in response to them, that will have wide relevance beyond the creative arts.

## Considering Liveness in HCI

The workshop will invite submissions that address the relationship between values of liveness and HCI in one or more of the following three areas:

### *Studies of Live Performance*

HCI research considering performance and digital art has a rich and well-established history. Performance presents unusual configurations of technology and users' interactions in challenging environments, and necessitates holistic approaches, which encompass aesthetic as well as functional concerns. Therefore, as a domain, performance offers an alternative perspective on interaction with technology imbued with subtle issues and values, such as those of interest to third wave HCI.

Studies have explored how the experiences of audiences [6], performers [9] and the blurring of boundaries between the two by varying levels of participation [8] might inform interaction design in a wider context. We argue that studies focusing specifically on qualities of liveness will contribute to this growing body of research by asking the

question: *what does it mean for performers to interact with technology in a live context?*

#### *Designing for Liveness*

Live performance settings present extreme challenges to the interaction designer. Buxton jokes that technologies could usefully be categorized by "*standard spec., military spec. and artist spec.*" [2], characterizing the particular challenges of unpredictability, stress and receptivity to the dynamic and spontaneous nature of creativity, which performance tools and systems must support.

Live performances are not simply task-based phenomena defined in terms of concrete functional goals. In the case of a musician, a range of elusive factors such as the communication of emotion to an audience [3], or the haptic response exhibited by an instrument may be the fulcrum upon which a satisfying live performance balances. If HCI is to assist those designing for liveness, we must ask: *how can we develop methods to support those wishing to design for live performance and how might we better incorporate these delicate and ephemeral values into interaction design?*

#### *Liveness beyond the Domain of Performance*

Many of the qualities present in live performance might also affect our interactions with technology in the more general context. For example, the sense of connection to a loved one over a videophone is profoundly affected by the liveness of the medium (i.e. subtle aspects of the ability to see and hear your partner). Considering values gleaned from the study of, and design for, live performance might provide useful insight that will allow designers to

better appreciate and understand a range of interactions such as these. Therefore, we call for contributions that ask: *how might lessons learned from the study of live digital performance be applied to interaction design in the wider sense?*

#### **Workshop Approach**

We argue that to understand and explore the subtle phenomenon of liveness in an HCI context, it must first be considered as a lived visceral experience [5]. We therefore propose a hands-on, highly pragmatic approach to the consideration of liveness in our workshop.

Attendees will be invited to experience a live musical performance that will be held the evening before the one-day workshop. This concert, held outside the academic confines of the conference, will allow the participants to share in the experience of an authentic live event. Participants will be provided with compact video camcorders and invited to capture events that they feel best represent their personal experience of the evening. We anticipate that the act of conscious consideration of the experienced event might not only inspire reflection on the performance itself but on its wider context; encouraging the participants to consider in detail, factors which might contribute to a sense of liveness such as ambiance, environment and the presence of other spectators.

The workshop the following day will comprise of three key activities. In the morning, participants will give short presentations, bringing their own perspectives on liveness to the table that will shape and guide discussion throughout the remainder of the day. Following this, participants will discuss their

experiences of the previous evening's performance with the aim of highlighting their individual and shared perceptions and perspectives on its liveness. Finally, participants will be presented with all of the footage captured the previous evening and digital video editing equipment. They will be invited to edit the concert footage to create a 1-minute video document of the event, which best reflects their experience of its liveness.

Our approach draws upon aspects of the Creative Response method proposed by Hook et al. [4], who invited video jockeys (VJs) to engage closely and creatively with video material to communicate their perspective on issues of live artistic performance. Creative Responses were found to act as a reflexive tool that inspired in-depth consideration of the subtle and often tacit values of an individual's perspective. Consequently, as our workshop footage is edited to respond to individual issues, the participants will be given the opportunity to examine, and reflect upon the particular qualities of liveness experienced at the event.

By framing this reflection in the context of a mediating technology (i.e. video), we will challenge participants to re-experience the event at one-remove; thus, fostering reflection about the differences between the liveness of an event experienced as *being there* and subsequently as recollected through close engagement with its video representation. We hope that the particular qualities of media and technology, which might arise when the former is conveyed through the latter, will serve as reflexive tools that inspire participants to sense and articulate values of experience, which are often only tacitly understood.

## References

1. Auslander, P. *Liveness: Performance in a Mediatized Culture*. Routledge, 2008.
2. Buxton, B. Artists and the art of the luthier. *SIGGRAPH Comput. Graph.*, 31, 1 (1997), 10-11.
3. Gurevich, M., & Treviño, J. Expression and Its Discontents: Toward an Ecology of Musical Creation. In *Proc. of NIME'07*, ACM, 106-111.
4. Hook, J., Green, D., McCarthy, J., Taylor S., Wright, P., & Olivier, P. A VJ Centered Exploration of Expressive Interaction. In *Proc. of CHI'11*, ACM, 1265-1274.
5. Le Dantec, A., Poole, E., & Wyche, S. Values as Lived Experience: Evolving Value Sensitive Design in Support of Value Discovery. In *Proc. of CHI '09*, ACM, 1141-1150.
6. Reeves, S., Benford, S., O'Malley, C., & Fraser, M. Designing the spectator experience. In *Proc. of CHI '05*, ACM, 741-750.
7. Schloss, W. Using contemporary technology in live performance: The dilemma of the performer. *Journal of New Music Research*, 32 (2003), 239 – 242.
8. Sheridan, J., Bryan-Kinns, N., & Bayliss, A. Encouraging witting participation and performance in digital live art. In *Proc. of BCS-HCI'07*, BCS, 13-23.
9. Taylor, R., Schofield, G., Shearer, J., Wallace, J., Wright, P., Boulanger, P., & Olivier, P. Designing from within: humanaquarium. In *Proc. of CHI '11*, ACM, 1855-1864.