This paper identifies new practices and possibilities at the intersection of Dance and e-Science. It is particularly concerned with the complexity of the concept of ‘location’ in relation to internet enabled performance practices. Julia Glesner provides a useful analysis of spatio-temporal relationships in internet performance: “telematic and distributed performances dissolve the spatial (but not the temporal) unity between performers and spectators and distribute the scenic space into diverse remote sites”.1 This paper considers the ways in which the e-Dance project2 is formulating a new mode of choreographic practice that engages with this dislocation in the co-dependent interrelationship of space and time. This new modality is distinct from existing on-line compositional practices such as ‘hyperchoreography’3 and ‘hyperdance’4 and as a result of recent advances in Access Grid5 and Hypermedia Discourse6 technologies, is also distinct in form and process from ‘distributed choreography’7 and other telematic choreographic practices. The research for this paper has emerged from the first six-month’s findings of e-Dance, a two-year interdisciplinary practice-led project bringing together practitioner/academics8 from the fields of Dance and e-Science, in a unique collaboration across three UK Research Councils.9

e-Dance repurposes the Access Grid (AG), an online, meeting environment using advanced video-conferencing and integrated knowledge mapping technologies, as a context for telepresent performance, and hypermedia documentation of this practice as research. Automated annotation of the media combined with human annotation using hypermedia discourse tools provides a rich, structured data repository, both for choreographic reflection in/on process and with the potential to support the subsequent construction of hypermedia research narrative better suited to non-linear argumentation and presentation. Through this convergence in the visualization of both spatio-temporal structures and discourse, the project addresses two intersecting questions. Firstly, what unique opportunities does the distributed AG environment provide for developing new approaches to choreographic process/composition and for capturing/modelling practice-led research? Secondly, how can choreographic knowledge and sensibility enable e-Science practice to make its applications more usable within performance/arts practice-led research?

Central to an interrogation of these questions and the locus for the interdisciplinary discourse, are multifarious understandings of space and in particular the concept of location. The paradoxical sense of the ‘located’ in the non-co-located environment of AG provides a fruitful intersection for a creative and critical engagement across the disciplines. e-Dance is focused on the integration of live and mediatised dance performance across multiple, remote sites. It is exploring this as a context in which choreographic process is radically reformulated and relocated. Like Bolter and Grusin’s “remediation”x, ‘relocation’ articulates a similar semantic movement or procedure. Yet, this is not only concerned with the conceptual/creative/idiomatic shift from one medium...
to another but also with shifts in the substance/context/affect of space. Given that the medium for choreographic practice, in its most essential terms, is the body moving in space and time, this radical revisioning has ontological and epistemological implications for the discipline. Johannes Birringer suggests that telepresent performance fundamentally challenges traditional formulations of compositional process and structure. “This is no longer the modernist notion of composition; rather...(it) resembles a kind of postproduction of recording/recorded data, which in the case of dance includes bodily movements, gestures, sensations. The emphasis has shifted from the object of representation to the emergent situation, and the materialization of technology, itself.”11 Performance within an AG environment is conceptualised and practiced as a ‘live’ phenomenon, in both the sense of actual, co-present activity and virtual non-co-present activity and the intersection between the two. In other words performers and spectators are co-present in physical spaces and simultaneously share multiple, virtual locations. Within an AG performance node the performers engage in live performance which is fed back to them and to other remote locations through streamed, wall-sized audio-video media. Several video cameras are used to provide a multi-perspectival view of the dancer’s body and the performance space in each AG node synchronously. This streamed media can be recorded and re-distributed to remote locations synchronously or asynchronously.

Projection of multiple video streams onto multiple surfaces provides the telematic performance interface. The performers interact with and through these virtual image-spaces. Nick Kaye suggests that such examples of multimedia performance “…emphasizes a series of divisions and multiplications in which key figures and themes return: the division between video time and performance time; between video space and performance space; and the multiplication of media in the theatrical re-framing and performance of mediation.”17 Project software developments have enabled each video window to be resized, the ‘frame’ can be changed and the opacity/ transparency of the image can be altered in real-time. Compositional relationships between video streams, in terms of the proximal relationship of the windows can be altered in real-time, saved and replayed asynchronously. Technical developments have been made using Java and the Java Media Framework (JMF) combined with Freedom for Media in Java (FMJ) additions. Streamed media formats include codecs compatible with the Access Grid toolkit and performances can be transmitted into any AG venue. In this environment embodied choreographic practice is relocated into live camera-editing/framing and therefore a form of live cinema or filmmaking. The creative potential of AG is not as a neutral location but as a multiple, faceted clustering of frames, planes, perspectives and positions that collide and interact by virtue of their sheer proximity. Anna Friedberg, in her wide-ranging and innovative analysis of the window claims, “Like the window, the screen is at once a surface and a frame. The screen is a component piece of architecture, rendering a wall permeable in new ways; a “virtual window”… adds new apertures that dramatically alter our conception of space.”18

The relocating of choreographic practice into the virtual distributed environment of AG collides narrative, memorial, embodied, experiential, perspectival,

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**Figure 1: Access Grid improvisation by dancer Catherine Bennett during an e-Dance research intensive at Manchester University, UK, February 2008. Photo by Helen Bailey.**
geometric, socio-political, geographic space and spatialities. Relocation therefore becomes a procedure of appropriating and refashioning spatial concepts, practices and experiences. In other words, it addresses the reflexive interplay of space and event\textsuperscript{19} that is so significant to the performative composition/construction of both dance and subjectivity. The innovative nature of the e-Dance project is in the reflexive relationship between the disciplines established in the collaborative interdisciplinary methodologies that have been developed by the team. These methodologies support a speculative, playful, engagement with the technology that enables a simultaneous critique of the systems under exploration. Tim Etchells states that contemporary performance ‘… must take account of how technology […] has rewritten and is rewriting bodies, changing our understanding of narratives and places, changing our relationships to culture, changing our understandings of presence.’\textsuperscript{20}

Figure 2: Dancers Catherine Bennett, James Hewison performing Space:Placed an Access Grid performance event during an e-Dance research intensive at University of Bedfordshire, Bedford, UK April 2008. Photo by Martin Turner.

2 e-Dance Project: www.ahessc.ac.uk/e-dance
6 Hypermedia Discourse Project, Open Univ: http://kmi.open.ac.uk/projects/hyperdiscourse
8 Helen Bailey, Catherine Bennett, Simon Buckingham Shum, Amalia Garcia, James Hewison, Anja Le Blanc, Sita Popat, Andrew Rowley, Martin Turner
9 AHRC-EPSRC-JISC http://www.ahrcict.rdg.ac.uk/activities/e-science/awards_2007.htm