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*Digital Technologies and the conundrum of
copyright and choreography*

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The Intellectual Property Rights (IPR) elements of the DIME Network currently focus on research in the area of patents, copyrights and related rights. DIME's IPR research is at the forefront as it addresses and debates current political and controversial IPR issues that affect businesses, nations and societies today. These issues challenge state of the art thinking and the existing analytical frameworks that dominate theoretical IPR literature in the fields of economics, management, politics, law and regulation-theory.

Digital Technologies and the conundrum of copyright and choreography

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Abstract

In the field of modern dance digital technology plays a significant role in the creative process. Increasingly it is being used to merge various art forms to enable the creation of new modes of expression. As digital dance becomes ever more interactive and collaborative traditional methods of recording and according authorship rights appear slow and costly. Policy vacuums and public funding pressures have left the sector vulnerable to commercial forces that whilst welcoming digital technology as part of the creative process also seek to gain advantage from the benefits it can bring in lowering the incremental costs of distribution. This brings an increased distance and anonymity between performer and audience that is intensified by the displacement not only of body, but also of experience. It is in this context that we explore the role of intellectual property rights and digital technology in influencing innovation and institutional practices within the contemporary dance sector.

Introduction

The debate over copyright or more generally intellectual property (IP) protection for artistic effort and creations is a familiar one. In recent years the rapid development and increasing sophistication of digital technologies and media in all arenas of artistic effort has added impetus to the discussion.

The development of digital media such as the Internet has increased both the potential for commercial exploitation of so-called creative industry products and services and increased the risk of unauthorised copying and exploitation of those products by unauthorised parties. For Kay Withers (2006, p. 6):

“New technologies have dramatically increased the publicness of information goods by making it much easier to copy and distribute goods freely. In a public policy context this is important because of the extra pressure it places on the intellectual property regime”.

This is exacerbated by the contentious nature of the term ‘intellectual property’, contentious because of the fact that “...IP is not technically property at all, but a *limited-term monopoly right...*” (Davies & Withers, 2006, p. 12).

Additional uncertainty is added by the tendency of policy makers to delegate responsibility for the development of appropriate cultural strategies by ‘attaching’ them to a wider set of social aims and objectives (Gray, 2007). Moreover the tendency to use the terms ‘cultural’ and ‘creative’ synonymously so that cultural activity in general becomes increasingly linked to commercial-oriented objectives rather than purely aesthetic ones, as witnessed by the UK Department of Culture, Media and Sport’s (DCMS) own definition is stimulating considerable debate about ownership rights for a whole group of parties involved in the creation, distribution and performance of cultural artefacts:

“The creative industries are those industries that are based on individual creativity, skill and talent. They are also those that have the potential to create wealth and jobs through developing intellectual property.”

As a performing art dance falls into one of the 13 sub-sectors included in the DCMS’s definition of a creative industry and it is in this context that we consider the implications of current public policy and developments in technological capability in the support and encouragement of innovation and creativity in the UK dance sector.

Although the discussion will reflect all genres of dance, particular attention will be paid to the possible effect of current political, economic and technological trends on the contemporary dance sector. This form of dance tends to rely heavily on state subsidies and is rarely considered commercially viable. However, it is seen as a field where innovation in the development of dance is concentrated and as such the question of how this innovation can be fostered and its outputs morally and economically protected in order to promote continuing creative endeavour is an important one.

The highly collaborative nature of dance raises interesting questions about existing “incentives” offered by copyright and other IPR protection mechanisms to choreographers to submit their work to a digitisation process when examined in conjunction with specific aspects of UK policy guidance. These include possibilities offered by the use of digital technology in a non-aesthetic capacity, i.e. as an alternative (by implication, cheaper) means of distribution and dissemination whilst simultaneously resisting the capacity of digital

technology to facilitate the unauthorised or undesirable appropriation of artistic work by third parties.

Digital technology in general is becoming a vital component of many types of performative occasions, of which dance events are an example. In such a context performative can be understood as “an expression that serves to effect a transaction” between parties (Merriam-Webster, 1993) and it is the role of technology in this transactional or (re)-mediation process that warrants more attention.

Such potential for digital technology to (re)-produce and (re)-mediate dance opens up new modes of expression and invents alternative spaces for the creation of meaning. It simultaneously challenges and even undermines the previously privileged status of the artist-choreographer (Birringer, 2002). If seen in conjunction with relatively recent trends in IP legislation, e.g. the 2004 World Intellectual Property Organisation (WIPO) draft commonly known as the ‘Global Broadcast flag provisions’ and the growing use of technological means to control access to and use of artistic works the possibility arises that the author’s role in the artistic process will be supplanted or at least diminished by others involved in the same process.

These developments are assessed against a background of fundamental shifts occurring in the pattern of artistic consumption as well as changes to the financial support systems for non-profit organisations. These changes suggest that the importance of an IP regime with a stronger public interest as opposed to a private one may significantly increase in the future.

The authors argue that in this environment cultural policy, whilst ensuring that the creative incentives and protection offered by a variety of IPR mechanisms, both regulatory as well as technological, is fully realised, it must nevertheless ensure that technology is not simply harnessed as a means to privilege the commercial interests of purveyors of mass culture and entertainment at the expense of artistic integrity and true innovation.

Background: Dance and Copyright

Almost three hundred years after its entry in the statute books copyright is still the most important means used in the UK for protecting creative works. Its origins can be traced as far back as the Middle Ages, in fact:

“Medieval scholars used to write curses into their books and if anyone copied, they would also copy the curse and be cursed. They didn’t want people to run off with their ideas and exploit them” (Lamont in Rankin, 2008).

Although copyrights and patents are the most familiar forms of intellectual property (IP) protection there are also several individual measures that organisations can invoke to protect their ideas, including trade secrets and confidentiality agreements (DTI, 2004). Copyright, which unlike a patent is granted automatically, tends to cover aesthetic creations such as artistic works and performances of which dance is one category. Patents refer to inventions whose methods have not been previously disclosed and which have some industrial applicability.

With the advent of the Internet and its far easier and cheaper means of sharing information commercial distributors claim that traditional regulatory and legislative means of protecting creative works are no longer sufficient to control their supply. This shift from what was essentially a closed to a more open exchange system undermines a supplier’s, i.e. primarily the commercial distributor’s ability to maintain a scarcity in supply and so encourage a demand for the works. This has led to the adoption of increasingly ubiquitous technological means to manage the exchange and manipulation of creative works. These means include digital rights management (DRM), which has emerged as a particularly powerful form of protection and means of enforcement of ownership and distribution rights.

DRM and so-called trust systems include any form of technology that can be used to restrict the sharing of knowledge-based assets or artefacts. Encryption technology is an example of this.

For dance the issue of IP protection is especially complex. Whereas the copyrightable format of other aesthetic works such as literary works or sound recordings can be easily defined

dance, expressed through its choreography, will only be protected by copyright law as a “choreographic show” (a sub-sector of dramatic works”), provided it is original, i.e. it is not a copy of another work.

This reflects the essentially collaborative nature of a dance work, encompassing as it does specialists from a variety of artistic fields such as performers, notators, choreographers and musicians.

In other words for copyright protection to apply, choreographic works [need] to be:

“fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.” (US Copyright Act, 1976).

In the UK perspective copyright law stipulates that dance must be fixed in “writing or otherwise” (Copyright, Designs and Patents Act 1988¹), i.e. by recording, by video or notation to have copyright protection. “Both expressions are fluid to enable the courts, in their interpretation, to accommodate future technological developments for the recording of dance” (Yeoh, 2007).

However, some writers have pointed out that there are flaws in the manner in which, for example, the US Copyright Office has defined rules that are supposed to clarify what constitutes expressive, copyrightable material in a choreographic work:

“This ambiguity creates an imbalance between the public and private domains, which acts to stifle choreographic innovations instead of encouraging it” (Lakes, 2005, p. 1831).

In a UK context the problem is exacerbated by the lack of formal policy on dance. Even more acute is the dearth of insight into the role that digital technology in its various manifestations can and should play in the promotion of dance. Despite the Arts Council England (ACE) heralding the advent of new media such as digital technology in the hope of ‘...making it possible to create and engage with it [dance] in new ways ‘ (ACE, 2006, [1]), much of what we have seen to date reflects a desire to achieve cost savings through increased operational

¹ Prior to the Act only notation counted as a method of fixing dance, video did not

efficiency or reducing the reliance of dance and other performance forms on public funding rather than of encouraging more engaging, collaborative forms of debate and consultation between a Government and its citizens (Siddall, 2001).

This lack of imagination is both puzzling and worrying since 'digital performance' dates back to the invention of new media technologies during the period immediately following the First World War. The ensuing avant-garde movements were widely recognised as having had a seminal influence on the development of the digital arts over the subsequent decades and for some observers futuristic principles based principally on the notions of virtual actors and the centrality of technology have an important place in the development of [digital] arts, including dance (Dixon, 2007).

As Dixon in the introduction (Chapter 1, p.3) observes:

“The interactive capabilities opened up by computer networks allow for shared creativity, from textual or telematic real-time improvisations to globally constituted group projects, with distance no barrier to collaboration. New technologies thus call received ideas about the nature of theater and performance into question. The computer has become a significant tool and agent of performative action and creation, which has led to a distinct blurring of what we formerly termed, for example, communication, scriptwriting, acting, visual art, science, design, theater, video, and performance art.”

Other observers including creative industry practitioners are also concerned with the uniquely powerful ability of the Internet to avoid institutional control:

“As a new system of “broadcasting” art, cultural projects, and advocacy, this use of the Net raises very significant issues of public space and public communication, especially since Web sites can be created by any individual or group with access to the Net, circumventing the institutional mechanisms of approval, funding, and legitimation that restrict who can exhibit what and where” (Birringer, 1998, p.312).

Birringer goes on to suggest that the chosen technological medium with its inherent features plays an important part in the way in which its potential audience not only receives, but also acknowledges and processes the transmitted content and ideas. Without clearly defined,

unambiguous ways of recording or documenting the original, underlying work the uniqueness and originality of the artefact may be called into question and with it the true authorship of that artefact. For example a CD-ROM, with its inherently one-way form of communication requires its audience to recognise and acknowledge the implicitly stronger position of the purveyor of the content, as he/she is simply *broadcasting* and not *exchanging* ideas with the audience.

On the other hand, submitting the content of the CD to the Internet exposes it to an anonymous audience for whom its value, based on mutual recognition, scarcity value and respect for the material, is diluted as a result of the apparent “free” availability of the content. With the concomitant “...absorption and distribution into simulated interface or synchrony, “interactivity” no longer involves any mutual or reciprocal process toward a shared dimension” (Birringer, 1998, p.318).

We return to this debate later in the context of Merce Cunningham and William Forsythe’s approach to choreographing dance movements.

Public versus Private Goods and the Role of Copyright in Cultural Production

If we accept the view that the economic importance of creative/ cultural industries is growing then it is necessary to re-examine the contribution that mechanisms such as copyright make to encouraging and protecting artistic, intellectual and creative assets. This is necessary given the complexity of the rights accorded in updates to international IP regulations to various parties involved in the creation, distribution and performance of such assets (Towse, 2006, p.569).

Observers have traditionally justified IP mechanisms such as copyright using a mixture of arguments based on the ‘public’ and ‘private’² nature of goods and the need to incentivise the innovation in both an artistic and entrepreneurial context (Andersen, 2003). Reflecting this view Davies & Withers (2006) have identified four priorities for a public interest IP regime: firstly, the economic incentive to innovate; secondly, the economic value of public domain; thirdly, the civic value of access and inclusion and fourthly, preservation and heritage.

² In this context ‘public’ refers to goods whose use cannot be restricted to authorised (usually paying) users. ‘Private’ goods are those whose use can be restricted to authorised users. If the goods are termed ‘rival’ their use or consumption means that there is less for other users or consumers. If the goods are ‘non –rival’ the opposite is true.

In the past the various parties involved in the creation, distribution or consumption of creative assets or artefacts have readily identified with these priorities. Whilst the commercial interests of distributors and authors of the works in question have been protected with the right to claim royalties for the authored work, provision has also been made for fair use by educational and cultural users in the public domain.

Implicit in this is the Bourdieuan notion that the production of cultural goods is based on the gradual diffusion of innovation from fields of 'restricted' or elite production to fields of 'mass' production. For Bourdieu a field is a site of contestation where struggles for symbolic or economic domination or power are played out. The field of production is characterised by a system of social relations that define the division of labour or production, reproduction and diffusion of symbolic goods and in which the dispositions or habitus of the individuals or agents involved influence the attitudes, behaviours and relative social standings of those agents. Bourdieu demonstrated that these agents are not necessarily conscious of their habitus, but are nevertheless inculcated with sub-conscious notions of legitimacy, prestige and recognition relating to the fields in which they enact their social relations.

Bourdieu went on to develop the concept of symbolic power where recognition is not based necessarily on the possession of economic advantages. Examples in the cultural arena that are heavily dependent on symbolic recognition include contemporary dance or music.

In order to appreciate these forms of so-called 'restricted production', i.e. cultural products intended for certain, limited audiences only, the agent needs to be in possession of substantial amounts of cultural capital that represent forms of cultural knowledge and competences that equip the agent to decipher or decode specific forms of cultural relations and artefacts (Johnson in Bourdieu (1993), p.7). The most esoteric (and thus, symbolically most significant) form of cultural capital that tends to be associated with an appreciation of 'high art' forms such as classical and contemporary dance can only be accumulated through extensive and lengthy educational processes provided by both family, members of an extended social set and institutions. Moreover, Bourdieu has argued that symbolic power can be exacted subconsciously through movement (and by implication, dance). As Gay Morris (2001) suggests:

“In terms of dance, this view of bodily practice offers the possibility of dance ordering thoughts and feelings not just through choreography, but in the basic techniques and comportment that present the body to the world in a particular way” (Morris, 2001, p.57).

Whereas the field of large-scale production uses market and economic competition to gain legitimacy through the accumulation of financial capital, restricted production assumes a role of authority through the recognition of a peer group using a set of criteria that are specific to that field and where financial success is not paramount. In the context of private and non-profit sectors involved in cultural production it can be demonstrated that producers of works regarded as elitist or requiring significant cultural competence tend to be unable to prosper without public subsidies, because their outputs are not aimed at maximising financial gains, for example, from box office receipts or sales or licensing of copyrighted works. This enables them to focus their efforts on innovation in their respective fields much more so than producers in the private sector who can only introduce innovation at a rate concomitant with the demand and ability of the audience to appreciate it.

However, recent research in the U.S. suggests that an elemental change in the structure of the performing arts sector is underway. This has in part been brought about by increased use of private sponsorship to support artistic events and a decrease in public sector funding. The study suggests that the demarcation lines between the organisations producing high and low art may fade and instead distinguish those organisations that cater for either broad or niche markets instead. Instead of viewing the commercial and non-profit/ volunteer sectors as distinct arenas of cultural production some observers claim that there is some degree of convergence occurring between them (McCarthy et al., 2001).

Although DiMaggio and Mukthar’s (2004) findings in part concur they find that there is a shift in the composition of performative events enjoyed by audiences who are considered consumers of elite forms of artistic works. They suggest that the prestige of elitist culture retains its attractiveness for educated classes, but that if traditional high art forms like classical music, theatre and ballet continue to lose out in terms of attendance to more modern performing arts like jazz they may lose their importance as indicators of cultural capital. If this happens then there may also be a growing reluctance amongst taxpayers to support such traditionally non-profit organisations, eventually resulting in a scenario where:

“...the “high-culture arts” would not disappear, but they would be left to fend for themselves as niche players in vast and saturated marketplace” (DiMaggio & Mukhtar, 2004, p.191).

For contemporary dance forms the empirical evidence from the DiMaggio & Mukhtar study indicates that no significant decline in participation at live performances occurred between 1992 and 2002. However, given the tendency for contemporary dance to operate in niche markets and be dependent on public subsidy the possibility arises that the same fate may befall this dance genre as well. Moreover for some types of modern dance, particularly so-called ‘digital’ dance, the impact may be even more pronounced if there is less incentive for commercial producers of cultural works to invest in making such works available digitally.

It is on this point of the digital distribution and control of cultural works that policy concerns of the commercial and non-profit/ volunteer sectors begin to noticeably overlap on questions such as copyright, IP and trade agreements (McCarthy et al, 2001). These concerns are shared by policy researchers in the UK who argue that the pervasive use of digital technologies for the exchange of information in various formats and at almost negligible incremental cost necessitates a re-evaluation of IP and its role in protecting both private and public information goods (Withers, 2006).

They raise two key requirements an IP regime, insisting that there must not only be good reasons for the way in which information is privatised or publicised, but that the mechanisms used to restrict access to or use of information must be equally justifiable.

This perspective acknowledges that whilst it is reasonable for private enterprise to be motivated to continue generating wealth-creating innovations by having the underlying exploitation of ideas protected by IPRs it is equally reasonable to expect that ‘cultural artefacts’ should be made available in the public domain without incurring excessive expense for those wishing to simply enjoy the fruits of artistic endeavour or use it as a basis to develop further innovation. This reflects a fundamental belief in the original role of copyright to balance the interests of individual creators with those of a wider society where cultural democracy is seen as an essential stimulus for new work.

Measures to promote technological means for protecting IP such as DRM have been heralded by many, primarily the commercial distributors of cultural goods, but also by other interest groups representing, e.g. performers as an equitable and justifiable means of invoking copyright. As commentators observed:

“Of key importance was the drive to ‘create new norms to respond to the problems raised by digital technology, and particularly the internet’ (WIPO 2004: 270), which became known as the ‘digital agenda’. This digital agenda covered a number of issues including rights applicable to the storage of works in digital systems, the limitations on and exceptions to copyright in a digital environment, and technological measures of protection and rights management information. It was the passage of the latter into US and EU law that has proved most controversial” (Davies & Withers, 2006, p. 20).

For example, the 1997 World Intellectual Property Organisation (WIPO), the UN agency responsible for IP treaties introduced new exclusive rights for performers who make their material available online to the public. As a result of this WIPO Performance and Phonograms Treaty (WPPT) legislators in EU countries (but not the US at present) have passed legislation that allows for individual exclusive rights similar to those of the authors of the work for non-featured performers such as backing singers and instrumentalists (Towse, 2006).

Simultaneously the WPPT prohibits circumvention of or tampering with technological protection mechanisms such as DRM. What is of concern to many observers is a slightly naïve view of this technical means to fix a complex problem. As Gillespie (2007) notes:

“This faith in technology as an inherently progressive force is a powerful Western paradigm wrapped tightly into the ethos of American culture (Gillespie, 2007, Ch.1, p.2).

He (Gillespie) continues with the suggestion that:

“Technological fixes also help abrogate the responsibility of both the people involved in the problem and the designers of the technologies themselves”.

In the case of DRM proponents argue that the technology being used is actually a way of safeguarding the interests of the digital democratic age in which we all apparently find

ourselves. No longer able to protect the commercial interests of cultural innovation in the wake of the emergence of the Internet, technology that radically altered the relationships between producers, distributors and consumers of culture, copyright legislation was regarded as inadequate for the job. As a consequence those with the greatest vested interest in maintaining strong copyright protection for their commercial activities, i.e. media distribution and production companies, sought a like-for-like means of tackling the problem. This resulted in the range of encryption solutions covered by such blanket terms as technical protection measures (TPM), trust systems and DRM.

However, the subsequent legislation in both the EU and more specifically in the US has caused critics to argue that the debate has moved from a definitional one about copyright to a much more fundamental one about the control of information per se (Gillespie, 2007).

As Vaidhyathan (2005, p.128) declares:

“Through such laws as the U.S. Digital Millennium Copyright Act (DMCA), information regulation is leaving the realm of human judgment and entering a technocratic regime instead”.

Copyright control is passing from content creators to content providers since the latter, in the form of film, music, text, software and even hardware producers, are able to both control and regulate use through the exploitation of DRM tools. In some cases the technology can be used to protect content that is already publicly available and even facts and data that are not covered by copyright law. What is more, unlike copyright laws these DRM tools do not automatically expire after a certain period of time and can thus continue to restrict access to users for an indefinite period, creating effectively a virtual, but nevertheless highly effective ‘enclosure’.

Some commentators like McChesney (in Vaidhyathan, 2005, pp.125-126) see parallels in this behaviour to that exhibited by major commercial operators during the early years of radio. Emphasis was placed on technical standards and compliance with those standards as a means of limiting the debate to regulators and operators, thereby excluding the ‘layman’ from having a voice in the development of the medium.

Even more insidious is the fact that the U.S. DCMA legislation has given commercial producers the ability to exercise much greater of control over the digital content they manage and distribute. Thus contractual promises not to parody or criticize work in exchange for access or undertakings not to reuse facts or ideas contained in the work can be extracted from users (Vaidhyanathan, 2005, p.129).

As a result the whole notion of ‘fair dealing’ or ‘fair use’ of copyrighted material is being undermined by an inherent lack of trust exhibited by the content distributors in the content users. This is amply illustrated by the pre-emptive nature of the encryption technology that underlies most of the technological solutions in that:

“...encryption intervenes before an infringement occurs rather than after. Such a preemptive measure not only treats all users as would-be criminals, it makes the imposition of copyright less open to exception like fair use, renders unavailable the ability to challenge a law through civil disobedience, and undercuts the individual’s sense of moral agency in a way that can undermine the legitimacy of the rule itself” (Gillespie, 2007, Ch. 1, p.19).

In a cultural context such application of technology to the protection of all forms of creative content appears to be a somewhat blunt instrument. Not only does it no longer properly recognise the difference between public access and private consumption, but it also fails to distinguish adequately between the form of the artistic content, the various parties involved in its creation and the specific organisational determinants (e.g. size, age, structure, power structure) that have resulted in the product (Towse, 2006; Castañer & Campos, 2002).

In other words electronic IPR and its manipulation do not distinguish between increasingly collaborative, specialised forms of performing arts such as digital dance nor does it recognise the type of market in which such creative works are being performed and produced. Thirdly, it fails to recognise what the primary motivations are for a performing arts organisation to innovate in an artistic sense.

This reflects the ‘scarcity’ factor that IPR introduces into the supply of cultural goods. In the context of mass culture goods such as film and popular music the issue is relatively simple; given the highly competitive market in which such products are sold artificial scarcity can be

a differentiator (witness the artificially inflated demand for Wii play consoles and the Apple I-Phone last year).

At the other end of the spectrum are performative works involving multi-media inputs that involve virtual as well as real performers; animated characters in virtual performances; motion capture techniques that synthesize actual movement to alter projected images and even intelligent systems that "...adapt on-stage and projected lighting as well as music to reflect the dancer's arousal state measured through physiological sensors" (El-Nasr & Vasilakos, 2007).

For academic practitioners like Johannes Birringer the whole notion of authorship or subjectivity of the mode of expression becomes blurred in such a context. For example, Merce Cunningham, one of modern dance's earliest exponents of digital dance collaborated with computer graphics experts, Paul Kaiser and Shelley Eshkar, in 1998 to create 'Hand-drawn Spaces', a 'virtual dance' piece. However, Paul Kaiser views this piece as a "...new form melding dance and drawing and filmmaking, whereas the Cunningham Company web-site claims the piece as "the first dance for the computer by a major choreographer" (de Spain, 2000).

Birringer argues that more attention be paid to what actually constitutes the artistic work or creation and the form of "...creative or perceptual *interactivity* in cyberspace" (Birringer, 1998, p.314), rather than focus discussions on questions of audience accessibility and participation he. This in turn begs the question as to what IPR is really protecting if there is such uncertainty about the principal aspects of the cultural artefact in question and how it is generated. Anthony Lilley echoes this view in his piece "Inside the Creative Industries: Copyright on the ground" (2006) when he quotes Lawrence Lessig's concerns about the impact of the so-called 're-mix culture' on IPR regimes (Lessig, 2005).

For a cultural economist the value of IPR in such a context may lie in the ability of smaller, niche organisations such as contemporary dance companies to make profits by reducing the fixed costs of live performance through the use of sophisticated digital technology in staging and transmitting the event. This however assumes that the transmission quality of the recorded or mediated performance is almost negligible in comparison to a 'live' performance

and ultimately depends on the extent to which audiences are prepared to accept purely mediated works as a satisfactory substitute.

Copyrighting Choreography: A movable feast?

Depending on the point of view espoused artistic works produced and disseminated via digital means can be regarded as heralds of alternative “social movements”, enabling equitable access and collaborative improvisation between artists and artist and audience or the by-product of “...free and unlimited reproducibility and parasitic proliferation, to the point where on-line “collaboration” may become indistinguishable from white noise:” (Birringer, 1998, p. 314).

For dance the implications of such forms of interactivity are profound. The work of El-Nasr & Vasilakos demonstrates the preoccupation with movement as a means to generate sensation both for the performer and the audience. More significantly the application of technology in this context depicts a return to an examination of the link between the body, movement and sensation.

Brian Massumi alludes to this point in his study of cultural theory’s failure to accommodate sensation in its studies of mediated experience. As he contends:

“The body was seen to be centrally involved in these everyday practices of resistance. But this thoroughly mediated body could only be a “discursive” body: one with its signifying gestures. Signifying gestures make sense. If properly “performed”, they may also unmake sense by scrambling signification already in place” (Massumi, 2002, p.2).

Various means can be used to reinforce signification during the performance of a gesture, including technology. Technology can also subvert the signification process itself, especially when too much emphasis is placed on the virtual and the displacement of tangible objects or bodies in the creative process. This can lead to a loss of authenticity and with it the integrity of the inherent artistic or choreographic intent.

Thus, whilst acknowledging the transformative and economical advantages of technology in manipulating simulated artefacts, the choreographer must not allow too great a distancing

between the live and the virtual otherwise he risks losing the very strength of digitally mediated environments to fulfil:

...”the desire of contemporary masses to bring things closer spatially and humanly, which is just as ardent as their bent toward overcoming the uniqueness of every reality by accepting its reproduction” (Benjamin, 1999, p.217).

When this displacement does occur, either as part of the performance or during the transmission process the uniqueness or aura of the work is undermined. On the other hand, the wholly legitimate aim of commercial organisations to protect the artistic content from misappropriation is itself undermined by the use of proprietary technical tools to ‘supervise’ the precise reproduction and supervision processes.

This reproduction and supervision process was, right up to the twentieth century, a highly qualitative one. Although written records of dance date back to the 15th century they were essentially imprecise and inefficient methods. Up until the twentieth century the manner in which dance was passed on relied mainly on imitation or oral tradition and choreographers relied mainly on custom and contracts to protect their work commercially. However, Joi Lakes (2005) argues that these means, albeit better than nothing, were imperfect and suggests that:

“These customs and contracts allowed for flexible enforcement of norms in a community that understood dance and its peculiarities. However, community norms were an imperfect means for control. Most copying likely went undetected or was, at least in some cases, condoned. Choreographers may have borrowed from one another’s works because they believed that copying only a portion of a choreographic work was not illegal, or because they believed they would elude detection” (Lakes, 2005, p.1833).

More scientific and analytic ways of recording dance needed to be developed in order to establish an internationally recognised, codified form of notation in the wake of the emergence of modern dance that brought with it non-standard movements. Having a common form of notation enabled a much more accurate reconstruction of a dance piece to be staged than before. It also represented a means of being able to faithfully reproduce a choreographer’s work in a format that minimised the amount of reinterpretation necessary and

helped to ensure copyright. However, it also lessened the personal control that a choreographer could exert over his or her work, because the notator could act independently of the originator of the piece. The two main forms of notation in use today are Labanoation and Benesh. The former tends to be used to record modern dance and the latter, ballet.

However, just as a dance performance is an interpretation of the work by its performers so to is "...the notation an interpretation and analysis of the choreography by the notator and its value is dependent not only on the notator's access to the choreographic process but also the accuracy of the notated score" (Yeoh, 2007). Additionally, symbol-based systems do not transmit sensations nor can they completely convey the meanings embodied in a dance performance (De Spain, 2000). Not surprisingly expert notators are rare and there tends to be a preference amongst dance companies nowadays to use film or video to record dance simply because it is quicker (and cheaper).

However, as Tembeck (1981-1982, p.77) points out, video and film are both visual media and tend to be used to record a piece from the audience's perspective only. The accuracy of the movements is affected by the static nature of the recorder and constrains the ability of the dancer learning the piece to faithfully reconstruct it.

Evidently the use of digital technology brings into question notions of identity, origin and temporal linearity with perceived shifts in emphasis, replacing the 'produced' with the merely 'reproduced' (Broadhurst, 1999). Moreover, the distinction between the two concepts can be blurred, depending on the role and perspective of the different agents involved. Thus, William Forsythe, whose work often consists of sequences of movements that can only be recorded using video or film (Baudoin and Gilpin, 2000), claims that his work is not reproducible.

Conversely Forsythe's own acclaimed CD-ROM *Improvisation Technologies* (1994 and 1999) offers the possibility of doing exactly that. This uses split-screen simultaneous camera angles and the superimposition of computer-graphical lines over video footage to trace and analyse arcs of movement³ (Dixon, 2007). Not only has the viewer now the possibility of understanding the work of Forsythe in a manner not possible in a live theatre, but the use of the CD as an alternative medium for the display of Forsythe's work also makes the distribution of that work and its subsequent interpretation and imitation simpler.

³ This technique was actually pioneered by the Bedford Institute in the UK during the late 1980s

There is a considerable degree of discipline in the “rules” that Forsythe applies to the origin and continuation of movement, something that is clearly demonstrated in the CD-ROM. He relies on the inherent ability and training of his dancers, often developed in classical dance schools, to process the information that he transmits in various formats throughout a live performance. Information is offered visually or in aural forms and dancers are free to accept or decline the offers, according to their requirements, thus extending the experimental right into the actual performance itself.

Notably, the transmission of information in all its forms relies extensively on multi-media technology and the ability of the dancers to process and respond quickly. In the performance of *Eidos: Telos* canvas screens with alphabetically ordered sets of instructions written on them are erected inside the stage proscenium. Clocks and monitors are used to transmit film clips, letters or time codes that can be combined by the dancer with the instructions on the screen to create unique sequences of movement. The more operations that are chosen, the more complex the subsequent solo becomes. The use of technology, as demonstrated by William Forsythe’s approach, facilitates the delegation of responsibility for the creation of the dance to the dancer him- or herself, something underlined in Forsythe’s tendency to refer to “good decisions” rather than “good dancing” when he meets his dancers after a performance.

The creation of tangible, fungible records of his work has a number of interesting implications for Forsythe. On the one hand his potential audience is widened, for they have only to purchase and watch the CD to appreciate his work. This is achieved partially by the creators of the CD-ROM themselves through the development of “...a methodology of description – a unique design interface – that effectively embodies and elucidates these improvisation technologies” (Shaw in Forsythe, 1999). Incidentally, the Bedford Institute in the UK were early pioneers of disc-based dance applications for schools and colleges for teaching purposes.

Conversely Merce Cunningham first used computer animation programmes as choreographic tools in the late 1980s and composed his first dance, ‘Trackers’, using ‘Life Forms’ in 1991. In 1994 Cunningham described his use of video and computers as being two of the “Four Events That Have Led to Large Discoveries”. The other two events were his adoption of chance methods to compose choreographic sequences and his famous method of collaboration

that consists of the independent development or design of all three dance elements, i.e. the choreography, music and the visual décor such that none is influenced by the other two and that all three are only combined when the piece is ready for the actual performance.

What characterises Cunningham's digital or virtual dance collaborations is the seeming randomness of the entire design process and the apparent unpredictability of the final product. Even more surprising is the fact that Cunningham *appears* to hand responsibility for creating an overall structure for the pieces to the visual artists themselves. However, in his role as 'animator-choreographer', a phrase first coined by Birringer (2002), he (Cunningham) is really the one who has control over the creative process, rather than the dancer, in interpreting and even translating the ideas of the 'dancer-choreographer' into movement and then combining the elements of dance, music and digital visualisation simultaneously.

Other performers have taken this a step further in their quest to be able to experiment more in similar collaborative art practices with the development of digital tools that enable simultaneous multi-channel editing and display (Newby & Dulic, 2002).

From a commercial perspective the use of digital media such as CDs and the Internet to record or reproduce 'live' performance opens up additional distribution channels, which have the potential to reduce the price of reproduction, modification, storage and distribution of the 'digitised' product. As Gerbert (2000) contends in his exegesis on the music industry in the context of the digital economy:

"In the long run the only relevant costs remaining will be creative talent, original production, marketing/ context creation ... and intellectual property protection/ authorization".

However, the very ubiquity of the performance, made possible by these digital channels, also serves to re-emphasise the nature and importance as well as the intellectual and economic value of authenticity in defining both the artists (dancers and choreographer) and the performance itself. Care must be taken that although this shift may remove the distinction between 'live' and 'recorded' performance, it should not be allowed to displace the body, whether real or virtual, as the primary focus of interpretation (Broadhurst, 1999).

Furthermore, the empowering effect of digital technology is, if the developments in the music industry are anything to go by, also likely to have an impact on the “people-formerly-known-as-the-audience” (Lilley, 2006). No longer is the cultural event or product limited either physically or temporally. Suddenly the audience is able to take a much more active role in transmitting and controlling a record and experience of the event in question. It should be noted though that this phenomenon is largely dependent on the willingness of audiences to accept digitally mediated performance as an equal substitute for live performance. In the case of dance this is a particularly pertinent question given the fact that according to Birringer (2002, p.87):

“In interactive art there is no audience but, strictly speaking, only users and interface participants”.

Birringer also contends that the relationship between the dancer and the computer in such an ethereal space, one which has no materiality, is essentially an unstable one. The choreography of the piece itself then becomes interactive and dynamic, reprocessing the live responses of its audience to create the composition (Birringer, 2002, p.87).

This aspect clearly challenges the ability of creators of such digital pieces to ensure the ‘integrity’ of the work once they are shared with the audience. As the dance community expands to include software specialists the whole process of creating and performing a dance event will become a multi-media one. How then should authorship rights be assigned in such collaborations? Where boundaries between roles and creative processes are being blurred, reliance on contractual frameworks to determine who is the true ‘owner’ of an idea and its realisation seems increasingly problematic in an evermore digitally mediated age.

Increasingly observers of the dance world are asserting that the time when community control of copyright for dance was flexible, allowing for copying and sharing the rapid expansion of recent decades in the UK, US and a number of other major Western nations means that alternatives to the existing IPR regimes are necessary in the longer term. The influx of new members coupled with increasingly ubiquitous digital technology will challenge established norms and make it easy for dance companies to by-pass choreographers altogether. Although some dance publications already encourage choreographers to beware of their legal rights the growing domination by large commercial organisations over the control and

distribution of copyrighted works makes it difficult for niche dance companies to maximise the economic value of their work by breaking loose from intermediaries. Farchy (2003) sees little evidence of this happening in any creative industry sector. Deals with major distributors usually involve some sort of signing over of copyright in return for access to mass advertising and marketing channels for the work in question.

Whereas the impact of various forms of enforcing copyright in the music and film industries have been considered, relatively little has been produced that addresses the issue in the dance sector. Of the models available possibly the one with a 'cultural' fit closest to the existing ways of working within the dance sector appears to be Lawrence Lessig's 'Creative Commons' project. Launched in 2001 the project enables copyright holders to grant some of their rights to the public while retaining others. Essentially it is a form of 'public' DRM whereby all types of artists and creators can stipulate the conditions under which they are happy for the work to be edited, re-mixed, copied or shared with others and fills the middle ground between 'all rights reserved' and 'no rights reserved' (Lee & Wheatley, 2005, p. 24-25).

Conclusions

The purpose of this paper has been to explore some of the challenges faced by the dance sector and in particular the contemporary dance scene in an age that is progressively more influenced by digital technology. Dance as a part of the creative industries sector is being encouraged to exploit this creativity to innovate and thus bring commercial gain to both itself as an industry and to the wider economy as a whole.

IPR, in the form of patents and copyright, is the most popular form of protection used by artists and creators. However, the question as to whether it is the most appropriate way of encouraging both commercial enterprise in the form of innovation and ensuring that the latter can be fairly used by a wider public is a vexed one. For dance the question is especially complex since its multidisciplinary nature brings with it specific issues such as the difficulty of recording work and attributing ownership rights. Moreover the adoption of digital technology by growing numbers of contemporary dance organisations to create and perform dance works involves several types of creative artist whose roles and tasks are not under the direct control or supervision of the choreographer, the person traditionally seen as the author of a dance piece.

Seen against the backdrop of policy guidance that emphasises the commercialisation of culture generally and changes to public sector funding policies for the arts the authors note that dance organisations face potentially major transformative change in both their structures and their ways of working. Dance training and education, modes of performance and even the choreographic process itself will necessitate familiarity with sophisticated technologies and different forms of collaboration and innovation.

Given the relative lack of attention paid to the dance sector on questions of cultural policy generally we suggest that there are a number of issues worthy of further consideration. In an increasingly mediated performance environment we ask where ultimately the aesthetic appeal will lie and what role the dancer/ performer will really have in bringing the work to life for an audience. Will performing rights be sufficient to justify a share of credit for a digital performative event when so much emphasis is placed on disembodiment and the separation of bodily movement and sensation?

Moreover, which of the licensing forms (if any) that are available for the sharing of works on the Internet are also suitable for digitally mediated dance?

The authors argue that in this environment cultural policy, whilst ensuring that the creative incentives and protection offered by a variety of IPR mechanisms, both regulatory as well as technological, is fully realised, it must nevertheless ensure that technology is not simply harnessed as a means to privilege the commercial interests of purveyors of mass culture and entertainment at the expense of artistic integrity and true innovation.

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