

Making Knowledge From Movement

James Leach

▶ **To cite this version:**

James Leach. Making Knowledge From Movement: Some Notes on the Contextual Impetus to Transmit Knowledge from Dance. Bleeker, Maaike. Transmission in motion : the technologizing of dance, Routledge, pp.141-154, 2016, 9781138189430. halshs-01423734

HAL Id: halshs-01423734
https://shs.hal.science/halshs-01423734

Submitted on 20 Jan 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Making knowledge from movement. Some notes on the contextual impetus to transmit knowledge from dance.

James Leach

Aix Marseille Univerité, CNRS, EHESS, Centre de Recherche et de Documentation sur l'Océanie (CREDO UMR 7308)
Anthropology and Sociology, University of Western Australia

Introduction

It is often observed that knowledge is crucial to contemporary developed economies (eg. OECD 1996). 'Knowledge' now denotes something people strive to produce, strive to have recognized, to evaluate, rank, and transact (Strathern 2004; Ong & Collier 2005; Camic, Gross & Lamont 2011). Indeed it might be fair to say that 'knowledge' has become a value term in its own right. As Klein writes, commenting on the recognition of contemporary dance as a form of knowledge, '[i]n the globalised world of the 21st century, knowledge is considered the key to prosperity, influence and power.' (2007: 26). In political, business and media rhetoric, innovation, creativity, and knowledge are often directly connected with economic dynamism, both in labour and in product innovation. In short, knowledge is a product of specific currency in a 'knowledge based society' (Klein 2007: 27), the societies described by sociologists as operating a 'knowledge economy' (Drucker 1969; Powel and Snelman 2004: 200). This context is one in which an openness to new sources of knowledge (see Fensham this volume), and to new possibilities to extract and make useable knowledge from hitherto overlooked domains (see Zuniga Shaw, this volume), is quite palpable (Strathern 2007). Knowledge itself is one thing. Identifying new and alternative means of producing knowledge that might have economic or societal benefit is another. It opens up the possibility for innovating on knowledge production itself. The rise of funding schemes targeted to art and science collaborations in the first decade of this century is just one instance of this drive (see Leach 2012), one that looks for knowledge production potential in arenas and domains hitherto considered 'beyond' (Brandstetter 2007: 42) the rational and discursive production of knowledge in science (see Klein 2007: 28).

A determined emphasis upon the value of knowledge is built in to a political economy reliant upon progress, novelty, product innovation and technology. Digital technologies make issues of access to knowledge, and of its packaging, significant. This emphasis on value and on packaging or making knowledge available is not only evident in external pressure to make academic knowledge have 'impact' for example (as in contemporary UK and Australian Universities) or to make academic knowledge production more directly profit oriented, it is evident in some subtle reshaping from the inside, as it were, of practices that have not necessarily thought to emphasize a knowledge component until now.

One contention in this chapter is that the desire to be recognised as knowledge producers compels people to make what they know and how they know it appear in a certain form. That is, as something that is detachable from its source, transactable across disciplines or domains, and thereby demonstrating, internally to its form, 'usefulness' or applicability (Strathern 2006, Leach 2011). In this regard, while there is a powerful institutionalised and politicised drive towards innovation and knowledge production in the contemporary world, the kind of thing that 'knowledge' is, is often actually quite

narrowly specified. That narrowness comes from an emphasis on demonstrating the utility of knowledge, and on its potential economic exploitation. Within the search for new methods of knowledge production and new sources of knowledge then is a hierarchy of knowledge that places utility as paramount.

In pointing out some specifics about this context, there is no implication (on my part) of a lack of agency on the part of dance makers engaged in finding forms for dance knowledge transmission, nor indeed, that the aspects I focus on are the only factor at work. It is quite obvious from reading the contributions to this volume (for example) that the desire to make knowledge and prove the value of dance as a knowledge making enterprise sits alongside other motivations and desires. Nevertheless, I suggest we look at how these motivations run parallel to, feed into, or are fed by, the opportunities and obstacles generated by contemporary tropes around the social and economic value of knowledge, transmission, and utility.

Repositioning contemporary dance.

Contemporary dance is a vital and fast moving genre of artistic practice, one in which emerging technologies, and multiple collaborations have figured prominently in the creative process of leading makers (Birringer 2008, Dixon 2007, Salter 2010). As part of the extension of practice through collaboration with other disciplines, and utilising new technologies as reported in this volume, a significant development in the genre has been the recent emergence of forms in which choreographic thinking (Stevens and McKetchnie 2005) and making are re-presented through technologically mediated artefacts (deLahunta & Shaw 2006). As Forsythe and deLahunata describe[1],

> '[i]n 1994, a prototype training instrument for dancers of the Ballet Frankfurt was produced in collaboration with ZKM. A commercially available version of this prototype, which constituted the first use of computer augmented representation of choreographic structuring, was released in 1999. *Improvisation Technologies: A Tool for the Analytic Dance* Eye has since been utilized in a wide variety of academic and professional settings, revealing the potential for such interactive platforms to *establish knowledge relations between dance and other fields'* (Forsythe and deLahunta 2011: 10, my emphasis).

Following from this pioneering project, people in and around contemporary dance have taken up the possibilities and potentialities of digital technology and new media to document and disseminate aspects of the process of making dances. It is worth noting that the use of digital technology was initially for the transmission of technique within a company. Once it was demonstrated that knowledge of technique could be abstracted from process, teaching tools became potential archives of technique, and then possible vehicles for the transmission of a technique to investigate and understand space and structure to those outside the domain. There are now a growing number of these initiatives; to the extent it seems accurate to note both an emerging genre, and an emerging community of practice (Leach et al 2009).[2]

In this chapter I draw upon research undertaken with four projects in particular, projects that were studied under an UK Arts and Humanities Research Council 'Beyond Text' Network Grant in 2009.[3] They are also represented in this volume. These are: the

---

[1] And Ziegler elaborates in this book

[2] And see: http://motionbank.org/en/resources-2/

[3] http://projects.beyondtext.ac.uk/choreographicobjects/index.php
http://insidemovementknowledge.net/context/background/double-skindouble-mind

Choreographic Language Agent, Double Skin, Double Mind, Siobhan Davies Replay: a digital archive of the work of the renowned UK Choreographer Siobhan Davies (http://www.siobhandaviesreplay.com/) and *Synchronous Objects for One Flat Thing, reproduced*, a suite of tools and entry points ('an online information base') for understanding and viewing the William Forsythe piece 'One Flat Thing, reproduced' (www.synchronousobjects.osu.edu/). The latter was 'intended to serve as a prototype for sharable principles of visualising information and facilitating understanding of time-based arts' (Forsythe and deLahunta 2011: 10) as well as more specifically of 'making dance knowledge explicit… through digital media' (Zuniga Shaw, this volume). I will also refer to the project that *Synchronous Objects* was the 'pilot' for called *Motion Bank*, based at The Forsythe Company in Frankfurt. *Motion Bank* is an extension of initiatives aimed at capturing and transmitting aspects of the choreographic practice of four leading choreographers. These projects, and the 'objects' they have produced are different enough to provide a range across the emerging genre, but linked not only by the use of new media, but in their aspirations, motivations, and concerns.

The quotation by Forsythe and deLahunta above points to one initial impetus. This was to make available techniques for generating dance material in teaching environments to inform more general audiences. Consistent with current developments, it also refers to the possibility that once in this form, choreographic practice offers knowledge that may be used outside contemporary dance itself. 'The data and animations reveal deep structure and make possible a new level of generative relations with other disciplines such as philosophy, architecture and geography' (deLahunta & Shaw 2008: 132). A rapid move from how to educate dancers within companies in the specific making techniques of these companies segued into a way to educate others about what dance is and how dance is made. This has its current apotheosis as an opportunity for contemporary dance to offer *knowledge* to other fields.

As a leader in the genre, Forsythe (with his *Improvisation Technologies* cd-rom referred to above) is one of the international stars of contemporary dance itself. It is worthwhile to quote from his published statements at some length to address the complex question of motivation and its intersection with the possibilities of digital technology on the one hand, and the knowledge economy on the other. He writes: '[dance]'s transient nature does not allow for sustained examination or even the possibility of objective, distinct readings from the position that language offers the sciences and other branches of arts that leave up synchronic artefacts for detailed inspection' (2008: 7). It is in this context that he asks the question,

> 'is it possible for choreography to generate autonomous expressions of its principles, a choreographic object, without the body? The force of this question arises from the real experience of physical practices, specifically dance, in western culture. Denigrated by centuries of ideological assault, the body in motion, the obvious miracle of existence, is still subtly relegated to the domain of raw sense: precognitive, illiterate. Fortunately, choreographic thinking being what it is, proves useful in mobilizing language to dismantle the constraints of this degraded station by imagining other physical models of thought that circumvent this misconception. What else, besides the body, could physical thinking look like?' (Forsythe 2008: 6).

Forsythe points then to the marginal status of contemporary dance as an art form, and links this to the ephemeral status of its time-based realisation. In this and other texts, he

---

http://openendedgroup.com/index.php/in-progress/choreographic-language-agent/

makes a direct comparison to a musical score and other inscriptions that render ephemeral practice into enduring artifacts. He writes,

> The current convergence of dance with digital technologies, disciplinary perspectives and emerging global audiences seeking to learn offers an unprecedented opportunity to illuminate the movement arts as systems of embodied knowledge. Motion Bank stands as a pioneering project at this critical juncture (Forsythe and deLahunta 2011: 11).

Unlike other classical arts then, contemporary dance has no widely accepted (or perhaps better, widely practiced and understood) mode of lasting inscription.[4] The artists and the research teams involved in these projects see themselves as developing forms in which to make such inscriptions. In doing so they are taking charge of demonstrating the possibilities for sustained engagement with and critique of dance making. The challenge is in finding forms of inscription that are true to choreography's form of creativity.

A brief example from one of the other contributions to this volume is illustrative. Florence Corin reports on the conversation with Steve Paxton during planning 'Material for the Spine'. Paxton describes two aspects to 'sensation' (the focus of his research practice). Firstly, it can not be anything other than experienced and secondly, the idea of 'product' seems antithetical to lengthy, open ended, research which is core to the 'knowledge' achieved. What 'was at stake' in making the DVD was 'how to express by text or by image your knowledge of the sensations of the body? (Corin p.)'

Note the emphasis on thinking, research, and knowledge in the above quotations. It is a vital counterpart to the desire to find appropriate inscriptive methods to preserve contemporary dance pieces: that is, there is knowledge and intelligence inherent in choreographic practice and appropriate modes of recording, inscribing and teaching dance will make this apparent. Ephemerality, which performance scholar Peggy Phelan has argued is a uniquely political and essential element of performance (1993) is not a problem for dance as dance, but it does have two consequences that are an issue: a lack of visibility in wider cultural and social milieu (Gabrielle Klein says 'dance has a communication problem' (2007: 26)), and that any form of inscription must show process and making, the temporal unfolding of choreographic thinking, not just a finished artefact.

Internal and External Motivations

A version of this concern motivated the producers of all the objects that we investigated in the Choreographic Objects Network research. In discussion with them, it was very clear that there is the *internal motivation* for their endeavour elaborated above: they wish to show the value and interest of dance to a wider audience than it currently has (to demonstrate the 'manifold possibility of our practice' [Forsythe 2008: 7]). There was a strong assertion that the practice has huge value and possibilities, but it is restricted to a small audience. Part of that is to do with its usual form of presentation: the performance that is live, ephemeral, and small scale. The internal motivation to see contemporary dance more widely recognised draws it into line with an *external motivation* as well.

The Forsythe Company, Siobhan Davies, and others represented in the genre receive significant public funding. We have seen above an explicit assertion in their statements that the value of dance is not just an aesthetic value. Dance and dance thinking has something to offer to the public, and to other disciplines and fields, they

[4] The dance notation systems Laban and Benesh are the traditional modes of inscription in dance often compared to music notation, but without the same widespread usage.

assert. Now, the governments of the countries in which these contemporary dance companies are situated promote the knowledge economy. Governments justify funding the arts to themselves and the taxpayer through a notion, closely allied to the knowledge economy, of 'creative industries'. Linking 'creative' to 'industry' was a particular British example, coined by the Blair government, but it is characteristic. The arts are acknowledged as economically valuable to the nation. However, that value is of an 'industrial' kind. They *produce* things that can be commodified. Indeed, 'the function of art in contemporary society as a particular form of knowledge production' is so visible to art makers that some actively resist exactly this colonisation (Cvejic 2007: 57). Yet against such resistance, the internal motivation of dance companies for recognition in contemporary terms runs up against an agenda around promoting an economically focussed, and knowledge-centric aspect of art's value to society. As the state minister for the German region of Hess (where Frankfurt and the Forsythe Company are located) wrote:

> Motion Bank is demonstrating in its own unique way how dance can move the field of information technology forward, taking it in unexplored directions…. Today it is generally agreed that culture and art – all creative endeavours, in fact – can be seem as drivers of innovation and technological progress… As a state government, we therefore promote diverse projects that allow the "creative economy" to unfold and realise its full potential (Eva Kühne-Hörmann 2011: 8).

Promoting the value of dance in terms of knowledge is characteristic for an economy that places value in knowledge (internal motivation), while at the same time dance must appear as knowledge in order to be perceived and acknowledged as valuable (external motivation).

At this juncture then, contemporary dance has found itself, through internal and external motivations, justifying its practice as a form of knowledge production. As an outcome, contemporary dance requires something other than the performance. They need to show the knowledge aspect. Choreographers have found a new medium in which to present and make dance making available to others, and in this, the genre is aligning itself with the wider political and policy interest in stimulating innovation and creativity in a knowledge economy.

I link this to the desire to show aspects of the *process of making*. This is, after all, what digital media are so apt at facilitating. Knowledge *in* or *of* a performance seems less significant in this context than the knowledge making process of creating material for a performance. It could be that is because the creation process is a series of explorations and experiments that generate knowledge, and thus is more similar to the investigations of science. It is often termed 'research'. It could also be that as stated above, it is not a single product that is of interest in the knowledge economy, but the capacity to create knowledge. 'Creative industries' are surely key to 'creative economies' because the very essence of dynamism and innovation lies in the creative capacity.[5]

What needs to be demonstrated is that choreography and dance involves practice and intelligence of a particular kind. That each piece realises a long process of stimulating, testing, generating, and organising material. And that this process is one of intellectual activity that relies on multi-sensory and multi-modal skill. In its spatial awareness, its emotional intelligence, its integrated and syncretic character, there is

[5] One might render the logic as something like: 'How crazy that this has been locked up in mere aesthetic stimulation for a tiny population of elite consumers for so many centuries!'

something called 'choreographic intelligence'. It can offer something other knowledge practices cannot. And that is valuable.

For the value to be realised, there needs to be a form for its presentation and circulation that demonstrates the various aspects of its realisation: the process of coming to, rather than the finished product. One could almost say that these 'choreographic objects' are reverse engineering the final product – the dance piece – to show its component parts. The site *Synchronous Objects* provides multiple visualisations and descriptions of the structure of the dance, the cueing systems that dancer's use and attend to in order to keep the structure and timing, and demonstrates the complex interplay of counterpoint and alignment in the piece. *Siobhan Davies Replay* is an archive not just of work, but of the scratch drawings of dancers in making pieces, of rehearsals, writings and inspiration. DSDM offers experience of 'coming to know' the body through particular forms of attention and the CLA abstracts a part of the choreographic thinking process, making the operation of thinking with the body legible. Both *Replay* and *Synchronous Objects* are a 'resource' for those who want to understand more. Resource in itself is an interesting term, directly connected to exploitation and use. In their form therefore, they anticipate the needs of others. That is, while each is an object that demonstrates and makes available the process of choreographic problem solving, by pointing to choreography as a site of knowledge production, they reposition dance. As Fortsyth put it, 'Ideally, choreographic ideas in this form would draw an attentive, diverse readership that would eventually understand and hopefully, champion the innumerable manifestations, old and new, of choreographic thinking' (Forsythe 2008: 7).

The constitution and circulation of choreographic objects

Now we have a sense of the context in which the objects are formed, it becomes obvious that contemporary dance practitioners are experimenting with forms of self-presentation that are impelled by on the one hand by a desire to extend choreographic thinking as a rigorous and specific artistic form, and on the other respond to value propositions arising from wider social and political interests. The idea of take-up, or use, is crucial here, and marks the endeavour out as very much of its time (where knowledge transfer metrics were being developed by the national arts funding body of the UK during 2011 and 2012, for example). In short, the objects are a means to several ends. The possibility for making this transition appears in the way dance practice and knowledge can inform and collaborate with other scientific and technological innovations and developments.

Given this particular impetus, the issue for those involved in *Replay* and *Synchronous Objects* for example became what to show of contemporary dance, and how best to do so. Digital technologies make issues of access to information/knowledge or its packaging significant (Brinkley 2006: 5) . I turn now to some more fine-grained ethnographic material, and report on things said in and around the processes of making the two sites. I will intersperse this material with the development of a simple analytic approach to attend to the further question of *why* certain aspects appear in the objects in relation to the notions of transmission, circulation, and the knowledge economy.

The research team behind the online archive *Siobhan Davies Replay* described their work as, 'a way of generating a larger audience for dance'.[6] This meant for them

[6] Unattributed quotations are directly from fieldnotes and reference people working on the teams that were making or had made these sites.

that ‘it needs to be attractive’. It was also a ‘way of showing its [dance’s] value beyond its original domain’ through giving access to a body of work. Meant as much for humanities and dance researchers as the general public, the archive was structured around a series of layers or levels of engagement. For Siobhan Davies, enthusiastically collaborating on the *Replay*, there were moments of discomfort in allowing such access. As she said, ‘things that are there on video is one perspective or aspect of the work and that is uncomfortable’. Whately (p…) reports that seeing things in the archive ‘can be disturbing for those who feature’, and ‘memories resurface, sometimes in less than comfortable ways’. The researchers creating the archive elaborated: ‘in practice, [Davies] always remakes a work. She never repeats it and that does pose questions about why post ‘this’ [version] when if it was remade, it wouldn’t look like that’. The choreographer ‘wanted something that allows her to have a dialogue with others’. But on whose terms, and how can these terms be enforced? What rules and norms are to govern the circulation and use? A certain authenticity was important to them for the inter-twined reasons of producing something the choreographer could stand by, and thus allowing an on-going formation of relations to others through that material that could be sustained from her side. Access to information might allow further interest and engagement, but what ‘knowledge’ would be transmitted in doing so? Decontextualisation of things and information is facilitated by information and communication technologies. The presentation of process-based, personal artistic knowledge as transactable or usable knowledge involves a form of translation, and a decontextualisation. And thus there are inevitably changes in both the ‘knowledge’ available, and the purposes and uses to which it might be put, in giving access to material as ‘knowledge’. One interesting aspect of this is to consider the kind of knowledge that the choreographer has about her pieces as something very personal, as existing in a context of relationships and a temporality, and the kind of knowledge that can exist in an archive as a ‘resource’ for others. Perhaps the former is not in fact transmissible?

Behind *Synchronous Objects for One Flat Thing Reproduced* was the driving motivation of William Forsythe who, as we have seen already, was concerned that the thought/intelligence in choreographic practice is not given enough legitimation. Exchange with other domains of knowledge is a way of legitimating dance and choreography as *thinking* that shows utility. Thus *Synchronous Objects* renders the structural complexity of co-ordinated movement in space into mathematical formula (‘choreographic data’) that are then presented through different techniques of data visualisation. I have suggested some reasons why showing ‘knowledge’ means having to show aspects of process, that is, where ‘knowledge is coming into being’. With Synchronous Objects, the makers chose specifically to highlight the structure of the piece, to make clear the intricacy of the movement and how it has its effect, through tools make its conceptual underpinning apparent. Something is abstracted from these processes as an object that can circulate, an object that becomes the basis for relations with other disciplines.

Underlying my choice of language here (abstraction, circulation, exchange) is simple anthropological device: the description of exchange systems and the objects that circulate within them as following the logic of gift or commodity forms of exchange. The location of choreographic objects at a point somewhere in between these two ideal forms is illuminating (cf. Humphrey and Hugh-Jones 1992) and perhaps highlights elements of turning the transmission of dance into the transmission of knowledge.

The gift in classical anthropological theory is a form of transaction that creates and maintains on-going relationships between the transactors. At the other end of the (simplified and highly abstracted) continuum lies the commodity form, a transactional form that implies no future relation between the transacting parties but an overarching set of laws that govern such decontextualised transactions (see Mauss 1990 [1923-1924], Gregory 1982). To make this concrete, the conventional form for the transaction of contemporary dance is the performance. Performances are a kind of 'commodity form'. An audience member buys a ticket, watches a performance, and leaves. Transaction complete. No on-going obligation or connection, other than individual (subjective) memories. There are conventional ways of further engaging in a relationship with a dance performance through criticism, discussion, and so on. And the genre is self-referential, with new works building on or having allusions to previous work. But such engagement is again both subjective, and with the *performance* as a finished entity; something presented as a complete and un-encumbered moment of experience.

In the formation of the performance as the 'object' of transaction there is a high degree of control exercised by the choreographer over what is released to others. The making process is out of picture, as it were. Thus what is made available is closed in certain ways. It is presented as something that reveals what the choreographer wants to reveal, and not other things. The possibilities for an on-going relation are circumscribed *in the object itself* to an important degree by the process of making it, a process in which it comes to take the form of an object appropriate for transaction at a singular moment. Perhaps we can think of the ticket purchase as giving access to *what* is made. Not to *how* it is made. One could gain knowledge *of* an artist, a piece, an oeuvre, but not knowledge of a productive process itself.

Now choreographic objects such as those discussed here, with a different intention, and containing different elements, occupy a different kind of transactional space. They are intended to carry the intentions of their makers in different ways, and with different consequences. In revealing process, specified in part by two needs (that of demonstrating and presenting choreographic making processes as knowledge producing, and that of making a longer term and on-going relations to audiences, users and so forth) choreographers are 'releasing' previously unreleased material. I think we might argue that in terms of the knowledge economy, this is because it is the *process* of creation that is associated with 'knowledge'.

The object that circulates is what brings people together. It is the reason for the relationship between people, serving as a 'boundary object' (Star and Greisemer 1989) around which people gather and realise different interests and value. It specifically enables knowledge to 'travel' (Strathern 2004). This forms a different relationship than that between the ticket-buying public and the performers/performance in conventional practice. This is evidenced by many aspects, one being that all those involved in making these objects repeatedly used phrases such as how 'brave' the choreographers were in revealing private process, about how they were making themselves 'vulnerable', and being '*generous*' in what they are doing. The language is important for this analysis.

An 'issue' for *Replay* was that of '[w]hen does one make the transition between process and performance?' That is, the excerpts of dance were chosen by a dancer who had worked for a long time with Davies, as 'someone [Davies] trusts' to know when this transition occurred. Trust was continually the basis for inclusion, yet commodity transactions imply no personal relation of trust, only trust in the overall system of law

governing property and alienability. The new forms of relationship to others made possible through *Replay* were just not institutionalised in the same way. They do not have the same set of rules.

Performances, or highly produced videos of performances, are made specifically for circulation as a commodity. They give access to *what* is made. In these forms, the self is removed, the vulnerability not apparent, and the problems, tensions, and negotiations that are bound to be part of a creative and complex generative process are taken out. This makes them suitable for transaction as a kind of commodity where the recipients are anonymous. But what is the outcome of the relationships formed through viewing the archive? The choreographers could not know what others would make of the material (in both senses of 'make', ie. comprehend and fabricate). In fact, they are invited *to* make something of it, as this is a demonstration of its value. But making has to involve *using.* There was a negotiation, in other words, in a complex space in which public and private, use and reuse, ownership and control, were real issues. The website was located as something between performance and relationship.

In the making of *Replay*, Davies exercised a degree of control over its content and form. It does not just contain everything that the research team could collect, but only things judged appropriate to be included. There are no costumes (described by Davies as 'dead and limp' without their animating bodies). There is no video of her working in the studio. I have already noted that she was uncomfortable with showing videos of past performances. To remain true to her vision and realisation of contemporary dance, it was important to be clear that 'dance works evolve'. Were the archived pieces to be staged now, 'these pieces would be re-made', would reflect where she is at now in her practice, not where she was then, and so on.

Now we could say that this level of control makes the archive look rather like a performance. What guided decisions about the material to include was not a desire for comprehensive documentation, a desire to make anything and everything to do with a work available (this is not just knowledge about), but to find an appropriate form for knowledge that might be taken up, made use of, to be released. The form of object, what it is constituted as, was in part determined by demands of a new context for exchange in which conceptions of 'knowledge' played a significant role. But the artistic form and the personal nature of the creative process, we might say, complicated the presentation of the archive as knowledge with utility.

Choreographic objects not only demonstrate something about dance making itself, they simultaneously show it as a knowledge making enterprise. What choreographers and dancers 'know' and do in movement has the potential then to become valuable for other disciplines, ranging from those interested in spatial organisation (such as architecture), through psychology interested in the co-ordination of movement and thought (with possible medical and therapeutic application) to modes of visualising and problem solving in the presentation of information through ICT's in other epistemic practices (such as geography or physics). By finding modes to capture and make available the knowing and the knowledge making practice of dance, they demonstrate the worth of contemporary dance as a knowledge practice in its own right, and to thus reposition the practice and its cultural recognition and valuation. This route to recognition, absolutely responsive to contemporary political economy, to the needs and strictures of a 'knowledge economy' (where the uses of arts is continually questioned) is also a route to remaking contemporary dance itself.

Conclusion

Choreographic objects achieve a transformation of contemporary dance's relationship to other parts of society. Dance knowledge is not alienated but extended through them. The fact that these objects expose issues of trust, temporality, and reciprocity in digitally mediated relations draws us towards asking how people try to enforce a form of relationship through the form of the knowledge they present. These concerns are driven by the need to exchange 'knowledge' rather than something else.

In a context where value is seen not just in ability, but in the articulation of ability (as knowledge), there is an understandable desire to represent skilled action as more than just technique or control (Marchand et al. 2010). That dance is not just intuitive or primitive. That is, to re-present skill and creativity in contemporary dance as a specific process of 'thinking', and the outcome, a form of knowledge. While nothing new (see Baxmann 2007: 209) the impetus to see movement as containing knowledge now manifests in contemporary dance as an emphasis on choreographic practice as a particular kind of intelligence (deLahunta 2010).[7] One that, once rendered in other forms (amenable to transmission and transaction) will be both visible, and communicable, as a contribution to wider cultural and economic development (see contributions by Bermudez, and Zuniga Shaw, this volume).

Underlying this is a stated perception among some highly successful dance makers that dance is a marginalised art form. More public understanding of it would increase its visibility and enlarge its cultural footprint. Then there is the requirement for dance companies to demonstrate the value of public investment through what is called 'reach' (in the UK at least). They need to show work to a certain number of people each year to justify public funding. (And therefore undertake to engage the public in other ways than dance performances, including education projects.[8]) There is also a strong desire to convey the depth and quality of the work.

Several dance companies are achieving these ends through, 'a growing collection of materials that is starting to define this new space for knowledge' … 'These publications are not artworks, but are developed with the aim of furthering understanding of choreographic ideas and processes and bringing these into newly productive relations with both general audiences and other specialist practices.' (deLahunta 2013: 170). Contemporary dance practitioners seek 'self determined' (Cramer 2010) ways to demonstrate the intelligence and thinking involved in movement. Terms such as 'choreographic intelligence', 'the thinking body', and 'physical thinking' are used. And there has been at first an incipient, and now a much more consciously articulated desire to see this kind of thinking, the knowledge made in dance, *transfer into other domains of practice*.

In the current political economy of knowledge, to achieve such uptake is in itself a political marker of value. Transfer, travel, take-up, and recognition, are all key to demonstrating relevance and worth (Strathern 2004, 2007). This contemporary political economy of knowledge then offers an opportunity for actors to show the value of their practices, if they demonstrate those are practices of knowledge production. In parallel, recent anthropological attention to practice and skill focuses on rendering skilled action as a mode of knowing, a way of thinking in action, thus emphasising the cultural contribution of skill and its validity as knowledge (Harris 2007, Ingold 2014). While the

[7] Rather than of dance as a store of sociological and psychological patterns, for example (Baxmann 2007: 208-9).

[8] http://www.randomdance.org/creative_learning

validation of choreographic practice as knowledge producing may be a liberating recognition of a value in contemporary dance, the re-rendering of practice as a knowledge producing enterprise also establishes certain parameters (given in the context) and interlocutors. It carries with it a series of challenges to the genre about how to make appropriate modes for the transmission of the art form. The projects referred to in the volume meet these challenges in various ways, and in some senses, consciously resist utility or appropriation. Yet the seduction of 'knowledge', rendered by the knowledge economy as something alienable from its source, and the political pressure to achieve such a form for dance knowledge, surely remains.

Acknowledgements
Maaike Bleeker's comments were very helpful in focussing this chapter on knowledge transmission in the knowledge economy. This makes it rather different from a previous paper called 'Choreographic Objects' published in the 'Journal of Cultural Economy'. I am nevertheless grateful to the editors of JCE for permission to reproduce parts of that text. I also thank the other participants in the 'Choreographic Objects Network' research project: Matt Ratto, Sarah Whatley, Bertha Bermudez, Norah Zuniga-Shaw, Siobhan Davies, Bill Forsythe, Peter C. Sholten and Emio Greco, Wayne McGregor, Tim Ingold, Gill Clark, Jessica Wright, and Nick Rothwell.

References
Baxmann, I. 2007. 'The Body as Archive. On the difficult relationship between movement and history' in *Knowledge in Motion. Perspectives of Artistic and Scientific Research in Dance.* Eds Sabine Gehm, Pirkko Husemann, Katharina von Wilcke. Transcript Verlag: Bielefeld. 207-216

Birringer, J. 2008. *Performance, Technology and Science* New York: PAJ Books.

Brandstetter, G. 2007. 'Dance as a Culture of Knowledge' in *Knowledge in Motion. Perspectives of Artistic and Scientific Research in Dance.* Eds Sabine Gehm, Pirkko Husemann, Katharina von Wilcke. Transcript Verlag: Bielefeld. 37-48

Bundes Kultur Stiftung 2011. 'Introduction' in *Motion Bank*, Frankfurt a.m.: the Forsythe Company.

Camic C, Gross, N. and M. Lamont (ed) 2011. *Social Knowledge in the Making*. Chicago: University of Chicago Press.

Cramer, F.A. 2010. 'Dance Archives and Digital Culture: The Current Situation in Germany', *Goethe-Institut e. V., Online-Redaktion May 2010*, http://www.goethe.de/ins/nz/en/wel/kul/mag/tanz/6087441.html accessed 25/11/15.

Cvejic, B. 2007. 'Trickstering, Hallucinating, and Exhausting Production. The Blackmarket for Useful and Non Useful Knowledge.' in *Knowledge in Motion. Perspectives of Artistic and Scientific Research in Dance.* Eds Sabine Gehm, Pirkko Husemann, Katharina von Wilcke. Transcript Verlag: Bielefeld. 49-58

deLaunta, S. 2008. "The Choreographic Language Agent." In C. Stock (Ed.), Dance Dialogues: Conversations across cultures, artforms and practices, Proceedings of the 2008 World Dance Alliance Global Summit, Brisbane. Online publication, QUT Creative Industries and Ausdance, http://www.ausdance.org.au.

---- 2010. 'Publishing Choreographic Ideas.' *ISEA2010 RURH Conference Proceedings* p. 42-44.

---- 2013.
deLahunta S., Bevilacqua F. 2007. Sharing Descriptions of Movement. *International Journal of Performance and Digital Media*. 3(1).
deLahunta, S. and Shaw, N. Z. 2006. Constructing Memories. Creation of the choreographic resource. *Performance Research* 11 (4) , pp.53–62
---- 2008 'Choreographic Resources: Agents, Archives, Scores and Installations', *Performance Research*,13:1,131-133
Dixon, S. 2007. *Digital Performance. A History of New Media in Theater, Dance, Performance Art and Installation* Cambridge MA: The MIT Press.
Drucker, P. 1969. *The Age of Discontinuity; Guidelines to Our Changing Society*. New York: Harper and Row.
Forsythe, William. 2008. 'Choreographic Objects', in *William Forsythe: Suspense.* Catalogue from the exhibition at Ursula Blickle Stiftung, Kraichtal May 17 June 29 2008. Zurich: JRP/Ringier. Pp5-7.
Forsythe, W. and S. deLahunta 2011. 'Motion Bank', in *Motion Bank.* Frankfurt a.m.: The Forsythe Company.
Gregory, C. 1982. *Gifts and Commodities*. London: Academic Press.
Harris, M. 2007. (ed) *Ways of Knowing*. Oxford: Berghahn Books.
Humphrey, C and Hugh-Jones, S. 1992. *Barter, Exchange and Value.* Cambridge: Cambridge University Press.
Ingold, T. 2014. *Making. Anthropology, Archaeology, Art, and Architecture.* London: Routledge.
Klein, G. 2007. 'Dance in a Knowledge Society,' in *Knowledge in Motion. Perspectives of Artistic and Scientific Research in Dance.* Eds Sabine Gehm, Pirkko Husemann, Katharina von Wilcke. Transcript Verlag: Bielefeld. 25-36
Kühne-Hörmann, E. Hessisches Ministerium für Wissenshaft und Kunst, in *Motion Bank,* Frankfurt a.m.: The Forsythe Company.
Leach, J. 2011. 'The Self of the Scientist: Material for the Artist. Emergent Distinctions in Interdisciplinary Collaborations' *Social Analysis* 55(3): 143-163.
Leach J. and R Davis, 2012. 'Recognizing and Translating Knowledge: Navigating the Political, Epistemological, Legal and Ontological', *Anthropological Forum: A Journal of Social Anthropology and Comparative Sociology*, 22:3, 209-223.
Leach, J., S. Whatley, S. deLahunta. 2009. Choreographic Objects: Traces and Artefacts of Physical Intelligence. Final Report http://projects.beyondtext.ac.uk/choreographicobjects/
Marchand. T., ed. 2010. Making knowledge. Special Issue, *Journal of the Royal Anthropological Institute* 16, Issue Supplement S1.
Mauss, M. 1990 [1923-4]. *The Gift. The form and reason for exchange in archaic societies.* Trans. W.D. Halls. London: Routledge.
OECD. 1996. The Knowledge Based Economy. Organisation for Economic Co Operation and Development: Paris. http://www.oecd.org/sti/sci-tech/1913021.pdf accessed 21/11/15
Ong, A, and Collier, S (eds,) 2005. *Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems.* New York: Blackwell.
Phelan, P. 1993. 'The Ontology of Performance. Representation without Reproduction', in P. Phelan, *Unmarked. The Politics of Performance*, London: Routledge.

Powell, W.W. and K. Snedman, 2004. 'The Knowledge Economy', Annual Review of Sociology 30:199–220. doi: 10.1146/annurev.soc.29.010202.100037
Starr L., and Greisemer, J. 1989. 'Institutional Ecology, "Translations" and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907–39', *Social Studies of Science*, vol. 19, no. 3, pp. 387–420.
Stevens, C and McKetchnie, S. 2005. 'Thinking in action: thought made visible in contemporary dance' *Cognitive Processing* 6(4): 243-252.
Strathern, M. 2004. *Commons and Borderlands. Working Papers on Interdisciplinarity, Accountability and the Flow of Knowledge.* Wantage Oxon: Sean Kingston Publishing.
---- 2006. A community of critics? Thoughts on new knowledge. *Journal of the Royal Anthropological Institute* 12 (1): 191–209.
---- 2007. Useful knowledge. 2005 Lectures. *Proceedings of the British Academy* 139.