

‘What’s in a Phrase?’

Co-author Phil Barnard. in *Tanz im Kopf / Dance and Cognition*. eds. J. Birringer & J. Fenger. Jahrbuch der Gesellschaft für Tanzforschung 15. Münster: LIT Verlag. 2005, pp. 253-66.

In June 2004, I received an invitation from Johannes Birringer to make a contribution to a book he was co-editing for the German Association of Dance Research on the subject of "dance in the mind/dance in the brain".¹ I proposed to co-author a submission with cognitive psychologist Phil Barnard and use it as an opportunity to write up the results of the Parsing experiment we had conducted during the ‘Choreography and Cognition’ project.² Barnard was slightly concerned that if we put “core data in that, it could potentially make it difficult to get it into a (science) journal subsequently.”³ We went ahead partly on the basis there was insufficient data for a formal science paper.

The Annual Journal of German Dance Research has been published since 1990. It serves to publish lectures that were held during the current year and brings together current theory of dance with contributions from international authors. Source:

<http://www.gtf-tanzforschung.de/html/5.htm> (accessed 7 May 2010).

¹ Email to the author, 30 June 2004.

² Documentation site: <http://www.choreocog.net/online.html> (accessed 7 May 2010).

³ Email to the author, 1 Oct 2004.

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What's in a Phrase?

Introduction

The concept of a *phrase* derives from music composition and comes into view in the context of dance defining itself as a unique art form in the early 20th Century.¹ Subsequently, it can be traced through a variety of discourses related to choreographic methods from the seminal “Art of Making Dances” by Doris Humphrey, published posthumously in 1959, through more recently published interviews with choreographers.²

Doris Humphrey addresses the organization of movement in time as the “theory of the phrase”. The key claim of this theory is that

“the good dance should be put together with phrases, and the phrase has to have a recognizable shape, with a beginning and an end, rises and falls in its over-all line, and differences in length for variety”.³

This is a theory not all contemporary choreographers after Humphrey were prepared to accept, and some have worked in direct opposition to it by attempting to make dances from which the phrase was removed. This was made explicit in the work of 1960s dance experimentalist Yvonne Rainer in her performance of “Trio A” and in her published survey of some “minimalist” tendencies in which she proposes to “eliminate or minimize” dance phrasing.⁴ In the early 1970s, under the influence of Eastern mysticism, another American choreographer, Laura Dean, and two other dancers would perform Dean’s choreography “Spinning Dance” for one hour during which the only movement is a “high speed, non-stop turn” with one stop and change of direction

¹ See Elizabeth Seldon: *Elements of the Free Dance*, New York 1930 (much of this book is dedicated to distinguishing dance as a unique art form).

² Doris Humphrey: *The Art of Making Dances*, New York 1959. Please see footnotes 5 and 11 for examples of published interviews.

³ Ibid. p. 68.

⁴ Yvonne Rainer: “The Mind is a Muscle: A Quasi Survey of Some ‘Minimalist’ Tendencies in the Qualitatively Minimal Dance Activity Midst the Plethora or an Analysis of Trio A”, in: *Work 1961–73*, Halifax (NY) 1974, p. 63.

after 30 minutes.⁵ It was not only the work of the American minimalists that broke with Humphrey's concept of phrasing necessary to constitute a good dance; it could be argued that the use of repetition in the work of German tanztheater choreographer Pina Bausch also strongly contradicts Humphrey's dance theory. And as recently as the late 1990s, in an interview with British choreographer Jonathan Burrows, Meg Stuart, an American choreographer living and working in Europe makes the statement that she has always

"rejected dance phrases. I hoped to eliminate the word or the concept of phrase altogether. [...] I am more interested in a physical state, emotional state, a task, so I try to find other ways to structure a piece."⁶

Despite these alternative and at times antagonistic approaches to Humphrey's idea of the phrase; as all movement is composed of temporal subdivisions, whether referred to as phrases, units, segments or parts, phrasing in dance making may be unavoidable. In the same interview cited above, Meg Stuart says: "I can't say I don't use phrases, I mean I think it's a bit inevitable." For some choreographers making use of the phrase or seeing movement as possible to divide into smaller time units was crucial to their creative process. For example, the choreographic approach of American choreographer Merce Cunningham had a major influence on the functional use of subdivisions of movement in time by beginning, in the 1950s, to use chance methods. Throwing dice to determine the position of a temporal subdivision created combinations or strings of units or phrases that did not always seem to go together naturally. Cunningham found this way of ordering a sequence of phrases required one to discover new ways of moving. He is quoted in the 1985 book "The Dancer and the Dance" as stating that the chance method "absolutely rearranged my idea of what coordination was."⁷ His use of this method is often cited as having called into question aesthetic and philosophical questions related to originality and authorship. For Cunningham this ap-

⁵ The reference to Eastern mysticism is from Deborah Jowitt: *Time and the Dancing Image*, Berkeley, Los Angeles 1998, p. 371. The quoted description of the work is Laura Dean's from an edited transcript in: Anne Livet (ed.): *Contemporary Dance: an anthology of lectures, interviews and essays with many of the most important contemporary American choreographers, scholars and critics*, New York (NY) 1978, p. 99.

⁶ Jonathan Burrows: *Conversations with Choreographers* (Meg Stuart, Lunacafe, Brussels 12/3/98) London 1999, p. 9.

⁷ Merce Cunningham: *The Dancer and the Dance* (conversations with Jacqueline Lesschaeve), New York, London 1985, p. 80.

proach also created a more fluid and complex relationship between movement making and composition.

Another following this line of choreographic thinking was the ballet choreographer William Forsythe who, beginning in the mid-1980s, developed a set of improvisation techniques his dancers used to generate phrases or units of movement material that could be fragmented, subdivided and then recombined spontaneously in the context of a performance. In an interview one of his dancers, Dana Caspersen, describes performing within the layered improvisation structure of "ALIE/N ACTION" (premiered in 1992):

"Well, say my thing is I'm supposed to go over to the upper left hand corner, and in the meantime I was supposed to accomplish some part of my gestural phrase, but then I had to help somebody move one of the benches which were on the stage. My time might be up before I'd complete the task, and then I'd have to just make a gesture or stomp in the direction of the unfinished task and then run back to the bench."⁸

As with Cunningham, Forsythe's experimentation with how phrases could be deconstructed into ever-smaller units of movement challenged his dancers mentally and physically, ultimately reshaping their bodies to accommodate these new ideas.

These reflections provide insight into the diverse ways of thinking about the design of movement in time, and unique uses of temporal subdivision in the making of a dance. The divergent phrase/anti-phrase views suggest that how the concept of the phrase is interpreted by a choreographer, its meaning, is as important as its existence as a unit of time. However, for those professions requiring a closer means of viewing and analysing the process and product of choreography – e.g. the dance teacher, critic and theoretician – the concepts of phrasing and temporal sub-divisions prove to be important as ways of looking at and understanding dances. British scholar Janet Adshead engages with the question of whether or not "identifiable principles and practices of choreography exist"⁹ by considering how theoretical articulations can emerge from a close study of a varying range of existing contemporary choreographies. So rather than advocating for the application of one set of principles from which a good dance should derive (*vis-à-vis* Humphrey), Adshead calls

⁸ Burrows: op. cit. (William Forsythe & Dana Caspersen, Ballet Frankfurt, 6/3/98) 1999, p. 25.

⁹ Janet Adshead (ed.): "Choreography: Principles and Practice (Issues in the Principles and Practice of Choreography: the Area of Study)", in: *Proceedings: Study of Dance Conference 4*, University of Surrey, 4–7 April, 1986, p. 11.

for a closer interrelation between the watching, analysis and making of dances.

One of the primary points at which separations occur between choreographers/dancers and scholars/critics is at the point where analysis and language are brought into play. There is a vast difference (we propose) between what is in a phrase that is articulated through verbal explanation and what is in a phrase that may be grasped at a more intuitive level by other cognitive or sensorial means. One possible way of exploring this difference is to provide a means of reviewing movement with and without verbal articulation. An example of this is William Forsythe's multimedia project "Improvisation Technologies: A Tool for the Analytical Dance Eye".¹⁰ This tool combines short sections of moving with simple animations and the possibility for the viewer to closely review at will shorter or longer movement segments through an interactive interface. There are verbal explanations of his movement theories but one can also see the same ideas performed without explanation. Forsythe describes the tool as one that

"doesn't teach you anything other than how to observe motion. [...] It shows just some of the ways of thinking about analyzing motion."¹¹

The obvious wider question to ask concerns what sources of variation underlie observations and interpretations of dance as it evolves over time. Our own interdisciplinary study, involving London based choreographer Wayne McGregor, ten dancers from his company, *Random Dance*, and psychologists from the *Cognition and Brain Science Unit of the UK's Medical Research Council in Cambridge*, addressed this question on at least two levels. What modes of thinking/analysing with or without verbal articulation occur in the context of different "parsings" (viewing movement sequences and segmenting them into smaller units)? And what value might be gained from tool-supported observation?¹²

¹⁰ William Forsythe: *Improvisation Technologies: A Tool for the Analytical Dance Eye* (CD-ROM and booklet), Ostfildern 2000.

¹¹ Ibid., p. 20.

¹² The interdisciplinary study upon which this article is based took place in the context of Phase II of "Choreography and Cognition", a joint research project initiated by arts researcher Scott deLahunta and choreographer Wayne McGregor to engage practitioners from the field of cognitive science in seeking connections between creativity, choreography and the scientific study of movement and the mind, <http://www.choreocog.net>

The Viewing and Parsing Exercise

The study took place during the early stage of making a new choreography when Wayne McGregor typically gives his dancers a range of improvisation tasks or assignments in order to generate a large amount of movement material from which the *language* of the new choreography is eventually distilled.¹³ Following two different sets of specific instructions provided by McGregor, four dancers from the company generated eight short movement sequences (two each) specifically for the viewing and parsing exercise. Four were developed following a set of points in space/location instructions and the other four following instructions that were more graphic and image based.¹⁴ These were created and set (not improvised) then each was performed immediately three times and videotaped; with one performance of each sequence to be selected for the viewing exercise. The final eight sequences that were selected varied in duration from 25 to 120 seconds and were converted to a digital video format that allowed presentation during the viewing exercise using Quicktime™ software (Figure 1).

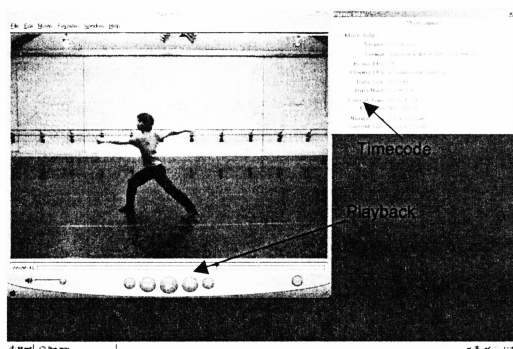


Fig. 1: The Quicktime™ software used for the viewing exercise.

¹³ For more information about Wayne McGregor's approach to choreography see: Jo Butterworth/Gill Clarke (eds.): *Dance Makers Portfolio: conversations with choreographers*. Bretton Hall 1998, pp. 105–113; Jo Butterworth: "Teaching Choreography in Higher Education: a process continuum model", *Research in Dance Education* 5 2004 1, pp. 60–62.

¹⁴ For more information about McGregor's use of instructions and scores see Scott deLahunta/Wayne McGregor/Alan Blackwell: "Transactables", *Performance Research*, 9 2004 2, pp. 67–72.

This made it possible for the viewers to directly control playback using the control buttons, cursor keys or direct manipulation via the playback head. In addition the movie information window showed the time associated with the current frame being displayed, and the soundtrack was deleted to leave only motion cues for the viewers.

In the viewing and parsing exercise, McGregor and the ten dancers were shown the sequences in a two-stage procedure. In the first stage they were simply asked to familiarise themselves with the full set of the eight selected sequences – simply viewing each in turn without pausing. The viewing order of the eight clips was randomised separately for each viewer. In the second stage they dealt with each piece in turn and did so in four passes through the procedure:

- In the **first pass**, they were again asked to watch the particular sequence without pausing.
- In the **second pass**, they could pause the action or move about the piece using the player controls.
- Only on the **third pass** were they asked to *parse* or divide the sequence into units of their own choosing.
- On a **fourth and final pass** they were asked to review and confirm their unitisation. At this point they were also asked to take a subset of the sequences and make brief notes about the bases of their unitisation.

The key pass was the third one when they were asked to *parse* or divide the sequence into smaller units. We did not wish to presuppose anything about phrases or structure so our instructions left it entirely up to them to determine what a *unit* was; they were simply asked to specify the time at which a unit began and ended. We even left it open for a whole sequence to be marked as an indivisible single unit. Start and end times were read from the Quicktime movie information window and entered onto a pre-prepared response sheet. The response sheet was organised into three columns (marked a, b & c) and this allowed for units to be organised hierarchically or using different bases for subdividing the same sequence. Once again it was left up to the participants to decide if they wanted to use a single basis for unitisation or multiple ones.

The dancers did the exercise in two groups and each group took well over two hours to complete the process. The first afternoon McGregor participated in

the viewing exercise and the second afternoon happened to include three of the dancers who had also created the sequences. At the end of each afternoon that day's participants were debriefed and invited to comment upon and discuss what they felt they had got out of viewing the sequences in this way and the discussion was tape-recorded and transcribed.

Quantitative and Qualitative Results

The viewing and parsing exercise provided a rich source of both quantitative and qualitative data. The core quantitative product took the form of a graphical representation of the distribution of units identified over time. An example of such a distribution for one sequence is shown in Figure 2. This has time running along the horizontal axis and the lines of check marks represent the start-end transition points (which blur together if in close proximity) marked by a particular individual, each of whom is identified by initials on the vertical axis. Notice that the top eight lines are individuals who elected to use only one basis for unitisation while the lower lines show three individuals who elected to use double bases (a, b) or triple bases (a, b, c) for unitisation.¹⁵ The collected qualitative data comes from the brief notes they were asked to make about the bases of their unitisation and the post-session discussions mentioned above.

The data shown in Figure 2 derives from individuals who were more or less familiar with McGregor's methods for generating movement material. As such they might be expected to produce similar results from the viewing exercise. And yet, like a microcosm of the wider evolving choreographic debate about the importance and nature of phrase(s), what is most striking from this particular Figure is not the points where a larger or smaller number of participants agree on the presence of a transition, but rather it is *the extent of variation* in placement of start and end points. The possible sources of this variation are as complex as dance itself, which, in its full staging, involves many dimensions in multiple sensory modalities (vision, audition, emphatic movement) as well as in the knowledge it activates and the interpretations and emo

¹⁵ We have also explored the potential for a second quantitative product to provide more formal statistical evidence about how different methods of movement generation can systematically alter perceived "properties" of movement sequences (such as the number and duration of units), but we will reserve a discussion of this aspect for another paper.

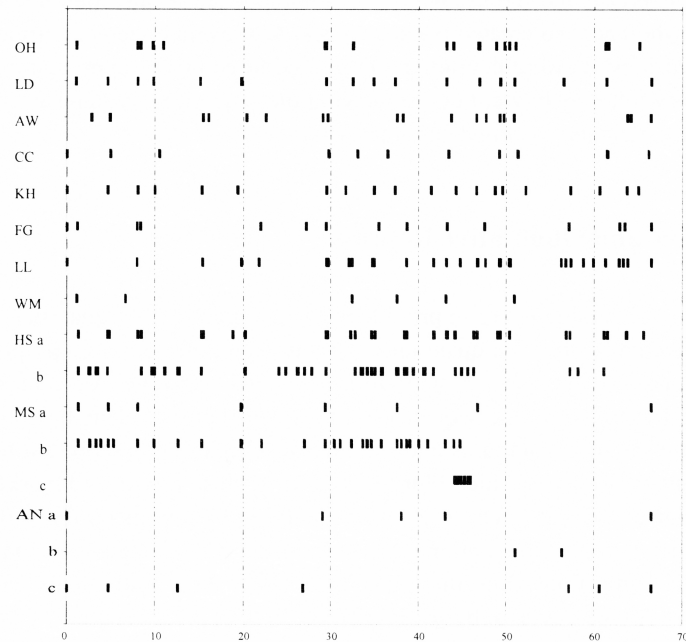


Fig. 2: Graphical representation of units identified by McGregor (WM) and the ten dancers: Claire Cunningham (CC), Laila Diallo (LD), Fred Gehrig (FG), Khamlane Halsackda (KH), Odette Hughes (OH), Léo Lerus (LL), Ngoc Anh Nguyen (AN), Matthias Sperling (MS), Hilary Stainsby (HS), Amanda Weaver (AW). This graph is the result of viewing a sequence that was generated using the graphic/imagery instructions.

tions it stimulates. Nonetheless, several generic points related to modes of thinking/analysis do emerge from this rather more constrained exercise.

Table 1 extracts a few comments from the participants concerning how they approached the task. All comments are indexed in what follows by Table and entry (e.g. 1.3). Key points are highlighted in boldface. Given the overt request to identify starts and ends, the twin threads of change (1.2, 1.3, 1.4) and flow/coherence (1.2, 1.5) are to be expected as are readily articulable attributes of motion like energy/activity/dynamic/direction (1.2, 1.3, 1.4) or ideas (1.2) and motifs (1.5). A core feature of why phrasing is problematic pervades

their discourse. Parsing and structure is accomplished in relation to some attribute or coherent sets of attributes as they evolve in time.

Index	Comments on overall approaches	Source
1.1	<i>"With some I watched the whole sequence and I would see that as one unit really. Then it became much more of a decision-making process. Then I had to make decisions about what my units would be and keep those... to try and be as strict as possible with those. And with others, it came more naturally. I felt I could do it more spontaneously."</i>	Laila Diallo (Dancer)
1.2	<i>"So (...) partly wherever I found a stop in the dynamic flow or a new idea coming in, or anywhere that I could make a set that was distinct from the rest. And then also partly looking in that way of trying to think about the task that the dancer is doing and when a new idea is coming in, when there's a change of dynamic or there's a change of activity. When it looks like there's a new idea coming in where one thing is finished and another thing begins."</i>	Matthias Sperling (Dancer)
1.3	<i>"There are three ways of breaking down that I was thinking about. ... The first one was when the task was apparent in the phrase. ... So you've got a section where you're extending lines or moving parallel lines, and that's very easy to break down. Then there are the more random ones that weren't so clear what the task was, that there was a natural stream of consciousness and it was quite clear where that ended. Sometimes it was obvious with something like a pause or a change of energy or change of dynamic. ... Then the third was very much like if you were trying to learn something or teach somebody something, where you would automatically break it down into parts that you could re-member. ... So that kind of thing of when we teach each other phrases and stuff like that."</i>	Claire Cunningham (Dancer)
1.4	<i>"... I think one of the clear ways to break something down was when something changed in level or direction, because it was such a definite change. Whether someone's up here and then they're down. ... Or if they're going that way and then all of a sudden they change direction. ... Because it was a clear change, that made either the beginning or the end of something, or the end and the beginning of something. ... That made it easier to read."</i>	Kham Halsackda (Dancer)
1.5	<i>"The things I kept in were things I felt were in some way articulate choreographic motifs. They were things that existed with a framework and a kind of a sensibility and a cohesion. The things that exist as a thing in their own right."</i>	Wayne McGregor

Tab. 1: Five observations on approaches

Since it is not possible to parse concurrently in relation to all attributes, it is necessary to invoke decision processes and schemes not just for the division of time but also to accommodate multiple perspectives such as the role of the task (1.2, 1.3), learning/teaching (1.3), and exactly what to attend to in dynamic bodily configurations. One dancer for example, paid little attention to the upper body and focused almost exclusively on the feet and legs. Another actually tested phrasal entities by overtly moving her upper body whilst

seated at the computer in order to decide whether a unit “felt right”. While the dancers unitized the full sequence, McGregor, the choreographer, tended to select only a few units of choreographic interest, leaving other segments of movement, labelled “choreographic waffle”, unparsed. His approach was fundamentally evaluative and critical – a feature that also emerged in the debriefing comments of others but not as a core basis of their temporal subdivisions.

Index	Comments on the bases of unitisation	Source
2.1	<i>“When you asked us to go back to describe why it was a unit, that was really interesting. ... When I started off the exercise and I was just writing down what I thought was unit, it was almost quite natural. ... Because I’m so used to looking at movement and doing movement, I just felt like I knew. My brain registered it as a unit. ... I wasn’t explaining to myself why that was a unit. It just was, I could tell. ... So it’s interesting to go back and then look at what I broke down and then actually describe why they were units. I thought that’s really strange. To actually justify it to myself why that was a unit.”</i>	Kham Halsack-da (Dancer)
2.2	<i>In response to the question about making notes: “Were you uncovering things that you think you knew, or were you trying to invent a reason or some rationale for something?” Phil Barnard “I think the reasons were there or you wouldn’t have made the choice in the first place. It was just actually looking at it and pulling it out of our mind, if you know what I mean, to put it into words. Like an instinct sort of thing I think.”</i>	Amanda Weaver (Dancer)
2.3	<i>“A part of me was doubting whether my choice for making that whatever it was, into a unit because once I’d described why it was a unit, I thought to myself, well that makes sense to me, but I’m sure that won’t make sense to anyone else. So maybe this is where it comes in. Where you’re saying we all understand it in our own way, but perhaps because we don’t ever do anything like this where we share the reason why. ... Why is that the end of a phrase. Who have you ever asked? We’ve never asked each other that kind of question before.”</i>	Kham Halsack-da (Dancer)

Tab. 2: Bases of unitisation and their articulability/communicability.

Another source of variation clearly involves a tension between implicitly knowing that something is recognisable as a unit, and being able to articulate what makes it a unit. This particular theme, a feeling of intuition, understanding or just knowing spontaneously (1.1, 2.1, 2.2) on the one hand, and on the other hand the ability to justify (2.1), put into words (2.2), or communicate it to someone else (2.3), was shared by many participants. Other dancers resolved the problem intellectually from the outset – determining highly ana-

lytic and articulable schemes and perhaps laboriously (one managed to complete only five of the eight sequences in the whole afternoon) sticking to them throughout. Interestingly two of the dancers who approached it this way used two or three levels of unitisation (MS and HS in Figure 2).

The observation that several of the dancers found articulation and communication of their bases of unitisation challenging will be of no surprise to those knowledgeable about what is implicit in craft skill as opposed to taught knowledge. However, the activity of producing detailed unitization of movement sequences in the context of the viewing and parsing exercise clearly differs in a number of ways from how the choreographer and dancers who participated in this study normally *view* the content of dance – either in the making or in the performance. The exercise focused their attention on movement elements at varying levels and across several different but related sequences. It led either to the articulation of detailed parsing schemes based around a range of temporal and non-temporal aspects and/or to a recognition that much of what is *in* a phrase normally goes unarticulated. It provided the participants an unusual opportunity for both individual and collective reflection on movement and produced a number of interesting insights as indicated in Table 3 below.

Index	Comments on insights attained	Source
3.1	<i>"I'd look at Kham and before I knew the way he moved and the quality that he would use in his dancing, but now (doing the parsing exercise) I can see the way he phrases it more. If you watch both of them (Kham's phrases) they're quite similar. I think it does make you look at it in a different way and notice more about people."</i>	Amanda Weaver (Dancer)
3.2	<i>"... as the exercise went on, also I felt my perspective of how I was looking at the exercise started to change a bit. I think I started off feeling like a unit to me in the beginning was more of a chain of movement. Then eventually it became not only just a chain of movement but perhaps looking at the intention of where the movement was coming from. I guess that came out through the quality of what was happening. So it wasn't just about starting and stopping and starting and stopping. There is another level that comes into it. After a while, after you really watch it again and again and again."</i>	Kham Halsackda (Dancer)
3.3	<i>"I think for me it was like empathising with Wayne a little bit, because we're looking at from his perspective, when you're looking at it on the screen. You're looking at what choices people are making to decide whether it's going in the right direction or not. It's a bit like I imagine he has to be in the studio. ... So we were kind of on the other side today."</i>	Claire Cunningham (Dancer)

Tab. 3: Some insights gained from the viewing and parsing exercise.

Both the qualitative and quantitative products reveal wide variation in the detail of how temporal organization can be grasped – and we have yet to complete the process of identifying what if any features are most likely to be associated with the highest agreement on major transitions. The products also reveal generic themes of inherent analytic ambiguity in the very nature of parsing and uncertainties in what is and isn't readily communicable. Not unlike Forsythe's CD-ROM described in the introduction our task for the dancers made possible alternative modes of watching/analysing and reviewing movement with or without verbal articulation. Our viewing *tool* also generated visual by-products such as Figure 2 to stimulate further discussion/reflection and as such might contribute to the domain of dance education not only in terms of acting as a forcing function for developing a more intricate understanding of what is known or familiar (2.1), for grasping different attributes by changing perspectives (2.2) and for understanding and perhaps facilitating communication among the roles of dancer, teacher and student (1.3) and what the choreographer might be seeking within the making process (3.3).¹⁶

Perhaps most challenging is the question of how viewing exercises of this type might sit in relation to evolving discussions of what constitutes a dance phrase; in relation to watching, analyzing, thinking and theorizing about dance practice and dance composition. Janet Adshead argues that to develop a theory that more robustly supports the variety of extant choreographic practice one needs to get closer to the detailed structure of dances by a "variety of means".¹⁷ Just as when different lenses or filters alter the structure of a photographic image and therefore how it is perceived, the viewing and parsing exercise provided an unusual means of looking at the detailed structure of movement. This was partly because the recording of units could be performed without recourse to explanation initially through the use the software as a viewing *tool*. In doing so the exercise reveals sources of variation whose respective roles are open to clarification, evaluation and debate. Rather than focussing on the significance of isolated features, configural inter-relationships or patterns across sources and levels of variation (ideas, intentions emotional correlates and movement attributes and granularity of temporal scaling) may

¹⁶ For some choreographers and dancers it may be of little or no value to take part in a study such as the one we carried out with Wayne McGregor and *Random Dance*; in particular if they have taken the position of rejecting the dance phrase like Rainer and Stuart. Could it be that a different type of viewing exercise could be designed that would correspond to these other value systems?

¹⁷ Adshead: op. cit. 1986, p. 13.

emerge as the most fertile ground to prosecute such debates. In addition, it is well known that prior to the development of algebraic notations, mathematical reasoning based on lengthy verbal exposition was intellectually cumbersome.¹⁸ Seeing configural patterns of potential theoretical significance in the domain of contemporary dance could ultimately prove to be facilitated by the development and use of empirically grounded notations such as those of Figure 2 appropriately tailored to support and develop the natural vocabulary of, and alternative perspectives on, choreographic discourse.

Seen from this perspective, the viewing and parsing exercise could provide an explicit and replicable methodology for addressing Adshead's call for a closer interrelation and interaction between the watching, analysis and making of dances. However, we have yet to test the use of this viewing *tool* on a different group of individuals or to expose it extensively to other members of either the dance or the psychology community.

In writing this article together, we hoped to partially accomplish this as well as explore some of the possibilities and limits of the arts and science collaborative research we have been involved with. Interested in continuing to debate and work out answers to some of the questions that have come up in this project, we have put the viewing and parsing exercise on-line where anyone can undertake the procedure and bring their own experience and knowledge to bear on the question "what's in a phrase?"¹⁹

The authors wish to acknowledge the crucial contribution of Anthony Marcel to the design of the viewing and parsing exercise.

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¹⁸ For examples of the value of notations see Henrietta Midonick: *The Treasury of Mathematics*, Harmondsworth 1968, pp. 202–203 or Thomas R. G. Green: "Programming as a cognitive activity", in: Hugh T. Smith/ders.: (Eds). *Human Interaction with Computers*, London 1980, pp. 274–275.

¹⁹ The On Line Viewing and Parsing Exercise can be found at: <http://www.choreocog.net>.

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