ABSTRACT
In this paper we describe our initial ideas towards research investigating dance-driven 3-D-camera interaction to be used as a tool for the creation of a holistic piece of art for an enriched performance experience.

In the first part, we focus on the technical analysis of requirements on a set of input parameters for the dance input.

In the second part we explore requirements stemming from the creative themes envisaged.

In the discussion we synergize these requirements towards the requirements on a first prototype of the dance-driven 3-D-camera interaction.

Author Keywords
Dance, Graphic design, interaction, Kinect, 3-D.

ACM Classification Keywords
H.5.2 [Information Interfaces and Presentation] User Interfaces: Input devices and strategies
J.5 [Computer Applications] Arts and Humanities: Arts, fine and performing

General Terms
Design, Human Factors.

INTRODUCTION
This paper describes the initial work that was undertaken towards researching options a 3-D camera offers as a novel interface medium for the creation of pieces of art, driven through dance. Here, dance fulfills two purposes: Following its traditional use to form a means for expressing emotions and possibly telling a story. On top of that it fulfills the function of being a language that is fed into the 3-D camera, then processed by software that takes this input and outputs graphic visuals that are fed back into the performance. The dancer can interact with these visuals. This way another level of performance can be reached.

The work was strongly reliant on a collaboration between the Computer Graphic Design Department and the Computer Science Department of the University of Waikato, as well as the dancer, Marie Hermo Jensen, from stellars dance NZ. Additionally, communication was held with other dancers from the Waikato Contemporary Dance Projects Trust and the Department of Engineering at the University of Waikato.

After giving an introduction into the two technologies used, we give an introduction into the dance background. This is followed by an overview of related work that combines dance and technologies. We give an overview of the difficulties the process of the requirements analysis involved. This is followed by a presentation of two different kind of requirements: input parameters and creative ideas. We then describe the pragmatic synergy of both kind of requirements we undertook. This is followed by the lessons we learned throughout this process. The paper is concluded by an outline of future work.

BACKGROUND
The Technology
We have worked with two different kinds of technologies, an experimental “Time of Flight” (TOF) camera and the Kinect camera. Working with the former turned out to be more challenging than expected. While working with it the Kinect camera (Microsoft Corporation) was released. It turned out to be more suitable for our purposes.

TOF camera experiment
Initially, experiments with gathering range imaging information were conducted using the TOF camera provided by the Department of Engineering. This camera
contains an IR light and IR sensor. It emits infrared light and records how long that light takes to return to the sensor. From this information, the distance can be calculated.

Using a webcam mounted on top of the TOF camera along with custom software (written by Andreas Löf & Paul Hunkin) to allow the reading and basic interpretation of the 3-D imagery, data was captured of various dance movements and gestures. The resulting data was processed in software called “Processing” to create various onscreen representations. Drawings and sketches developed from the captured data and observation of the test environment, for use in later graphics.

**Kinect camera experiment**

Further experiments were conducted using the newly released “Kinect” system. The Kinect camera features two cameras in a single housing: a VGA 640x480 pixel color camera and an infrared system producing a 640x480 depth image. Unlike the TOF camera, the Kinect camera system emits a pattern of dots and calculates the depth by the distortion of the pattern, rather than timing the light.

Initial experiments with the Kinect worked with the camera depth data directly, using software written by Andreas Löf. The most recently tested system uses a software toolkit, the “Flexible Action and Articulated Skeleton Toolkit” (FAAST) that attempts to find the underlying pose of a human figure based on 3-D input information from the Kinect. The information is passed from FAAST using additional software written by Paul Hunkin, into “Processing” where the data is interpreted and new graphics are created in response. Based on the experience of using the skeleton data, further graphical ideas were sketched for later development.

**Contemporary Dance**

Almost every culture has brought forward their own form of dance. Moreover dance styles, have evolved over the centuries. While some general principles underlie almost all forms of dance (e.g. expressing emotions through movement, travelling through space, differentiating between bigger movements and smaller gestural movements), analyzing these general underlying principles poses to be too general as a foundation for our dancer-3-D camera interaction. Therefore we had to make a decision as to what kind of dance we would want to take as a basis for our project.

We had to choose from a range that includes dance forms such as traditional Indian dance, Chinese dance, ballet dance, ballroom dance and Latin American dance. Augmenting the dance performance through graphic visuals that are created through the dancer’s interaction with a 3-D camera is to be found on the more experimental side of dance rather than following a tradition. Therefore, we choose Contemporary Dance (Barbour, 2007) as a more experimental form of dance.

Contemporary Dance evolved beginning to mid 20th century. It was a counter-movement to the rigidity of classical ballet. It is related to Modern Dance and Postmodern Dance. Famous choreographers and dancers include Martha Graham, Jose Limon, Isadora Duncan, Mary Wigman and Merce Cunningham.

Typical features of contemporary dance are contact work between the dancers that often has improvisational character. Movements exploit the dancers weight giving the movement an impact down rather than up as can be seen in classical ballet. This results in an extensive use of floorwork (see Figure 1).

Figure 1. Contemporary Dancer doing Floorwork.

Another focus is the breath-based contraction and release technique that make the dance work with the dancer’s body rather than against it.

Contemporary dance focuses primarily on the feeling of a movement rather than on a defined position of the body such as for example arabesque or attitude positions in classical ballet (see Table 1).

<table>
<thead>
<tr>
<th>Attitude effacée derrière.</th>
<th>First Arabesque.</th>
</tr>
</thead>
</table>

Table 1. Classical Ballet Positions.

Going with the feeling of the movement is emphasized through the exploitation of gravity and the momentum it gives the dancers body.

These features lead to a wide range of movements. One goal of our initial research phase was to analyse this range of movements in its potential as input parameters for the 3-D camera.
RELATED WORK
We have analysed existing works that link dance and video. Traditional dance-related areas that use technology-support are administration, lighting control and sound control.

Newer developments, deal with competition scrutineering, teaching and supporting the creation of choreographies. For this, there are solutions that enable collaboration between several choreographers and dancers, tools that allow for the interactive creation of movement sequences and phrase structure detection and capture.

However, relevant for our project were only works that deal with performance-related issues:

Interaction Technologies
The majority of existing works employs some form of dancer-mounted technology. Depending on which devices are used, this sets restrictions on the movement-range of the dancer and thereby impacts on the possibilities of choreographies. In several projects Meador, Kurt and O’Neal use motion capture suits (Meador, Kurt, & O’Neal, 2003), (Meador, Rogers, O’Neal, Kurt, & Cunningham, 2004).

Another input technology that has been trialed were portable mice (Latulipe & Huskey, 2008).

(Bailey, Hewison, & Turner, 2008) were working with visual sensors that were attached to the dancer’s costume. Also, (Vanier, Kaczmarski, & Chong, 2003) were using markers that were attached to the dancer’s body. They were used for recognition by motion capture software.

Input Parameters
One work that discusses potential input parameters is (Meador, Rogers, O’Neal, Kurt, & Cunningham, 2004).

They were using Laban’s theory of effort and shape. In it, they subdivided effort into the components weight, time, space and flow.

For the shape parameter they tried to find “opening and closing shapes, spoke-like directional movements, and rising and sinking carving shapes”.

Graphic Output
Various visual outputs were created in recent projects. (Meador, Rogers, O’Neal, Kurt, & Cunningham, 2004) were working with augmented costumes.

More abstract real-time computer graphics were created by (Latulipe & Huskey, 2008), (Meador, Kurt, & O’Neal, 2003) and (Meador, Rogers, O’Neal, Kurt, & Cunningham, 2004).

An early group active in combining dance and technology is Troika Ranch (Coniglio, Stoppiello, & Sherburn, 1994-). Amongst other techniques, they work with virtual dancers. In 2009, the early work Hand-drawn Spaces (Cunningham, Kaiser, & Eshkar, 1998) was designated as a “Master Piece” and given funds for its restoration. (Meador, Kurt, & O’Neal, 2003), (Meador, Rogers, O’Neal, Kurt, & Cunningham, 2004) and (Vanier, Kaczmarski, & Chong, 2003) have worked with projections of the dancer, modified the projection, or gone further and created entire virtual dancers.

Another approach that was taken was the visualization of movements, i.e. the creation of graphical trails of movement (Bailey, Hewison, & Turner, 2008).

Analysis and Documentation
Some works entailed the task of motion detection and/ its capture (Bailey, Hewison, & Turner, 2008), (Goel et al., 2005), (Meador, Rogers, O’Neal, Kurt, & Cunningham, 2004). This was either used for documentation purposes for teaching dancing or for the further analysis for the creation of visuals.

REQUIREMENTS
In order to find out the requirements of the project, the following questions were explicitly or implicitly raised by one or several of the project partners:

1. How can the given technology further creative dance and graphical works?
2. What are suitable input parameters for the 3-D camera?
3. How can they be identified?
4. What are the limitations of the technology?
5. How will the dancer interact with the given technology?
6. What are creative dance ideas?
7. What are creative graphic design ideas?

It was a challenge to identify a mutual set of requirements for the project: When looking at the process of requirements analysis for the project, it turned out, that different questions were of different importance to the different partners involved in the collaboration.

All agreed on question 1 as the main question. This, however, did not mean that all project partners were intending to follow the same path to finding out the answer to this question. Table 2 shows which sub-questions each party was looking at in order to get closer to an answer to question 1.

<table>
<thead>
<tr>
<th>Area</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCI</td>
<td>2, 3, 4</td>
</tr>
<tr>
<td>CS</td>
<td>2, 4</td>
</tr>
<tr>
<td>Dance</td>
<td>4, 6, 8</td>
</tr>
<tr>
<td>Graphic Design</td>
<td>4, 7</td>
</tr>
</tbody>
</table>

Table 2. Research Focus.

The following two sections try to describe the different routes taken by the different participants.
In order to answer question 1, Computer Scientists and Human-Computer Interaction researchers, were interested what input parameters could be identified from the dance video stream (cf. question 2). Human-Computer Interaction researcher also cared how these parameters could be identified (cf. question 3) as they had to be parameters that would be suitable for the dancers to work with, once the system would be up and running.

Once the parameters were identified and appropriate software developed, the limitations of the camera could be tested.

Participants and Method
The process used for the identification of parameters was an organic informal process and had ethnographical aspects: It was a discussion-based process that involved practical dance experiments in the dance studio—very much alike to traditional choreographic work of choreographers.

The Human-Interaction researcher already had a background of more than 6 years active dancing from her youth. Dancing was taken up again when working at the university the research was undertaken. This way, existing connections between her and a dancer of stellaris dance NZ could be used: Thus, the expert dancer was familiar with the researcher through being her dance teacher.

The Graphic Design researcher introduced himself in the dancers natural work environment – the dance studio.

Other computer scientists (the programmers) and graphic designers (summer research student) were familiarized with different forms of dance through the use of dance videos and interaction with the professional dancer.

Results
The Human-Computer Interaction researcher developed a set of initial parameters taking into account her previous knowledge of dance. The idea was to discuss this set and refine it with professional dancers.

- Usage of space
- Dynamics of movement
- Grouping
- Orientation of dancer
- Ballet poses/movements
- Gestures
- Look at static parameters over time (e.g. usage of space over time)

This list was presented to the professional dancer. She and the Human-Computer Interaction researcher discussed the project with dancers from the Waikato Contemporary Dance Projects Trust.

Following to that, the professional dancer developed a set of parameters to be tested at an experimental dance sample data videoing:

- Movement
- Dynamics
- Levels
- Angles
- Body Parts
- Relationship of bodies (e.g. distance, partnering)
- Gesture vs. dance

Experimental Dance Sample Data Videoing
The different sets of parameters were discussed. Then, in order to help identifying which parameters can work with the technology, sample dance data was gathered. The sample gathering process was interactive and took part in the university’s dance studio. The technology used was the TOF camera. The professional dancer and the Human-Computer Interaction researcher improvised movements that corresponded to both parameter sets. While doing this, they and the Graphic Designers checked the outcome of the data processing. The so-found feedback was used to drive the improvised movements closer to the limitations of the technology.

Table 3 shows the list of parameters that was tested with the technology.

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>Usage of space (e.g. using all space available or limiting yourself to a minimum amount of space)</td>
</tr>
<tr>
<td>Dynamics of movement</td>
<td>Speed at which a movement is performed (e.g. quickly/slowly, suddenly with impact/continuous)</td>
</tr>
<tr>
<td>Grouping</td>
<td>Relationship of bodies (e.g. distance, partnering)</td>
</tr>
<tr>
<td>Orientation</td>
<td>Way in which dancer are facing (e.g. towards audience/backstage)</td>
</tr>
<tr>
<td>Ballet poses</td>
<td>Positions as defined by classical ballet (e.g. attitude, arabesque)</td>
</tr>
<tr>
<td>Gestures</td>
<td>Small movements of hands and arms that</td>
</tr>
<tr>
<td>Look at static parameters over time</td>
<td>How static values vary over time (e.g. usage of space over time)</td>
</tr>
<tr>
<td>Levels</td>
<td>Usage of third dimension (e.g. floorwork vs. )</td>
</tr>
</tbody>
</table>
This set of tested parameters contains most parameters from the initial two lists. The professional dancer and the Human-Computer Interaction researcher had come up with similar concepts for the analysis, so merging the lists did not pose a great challenge.

### Technical Limitations

During the experimental dance sample data videoing, question 4 was raised (“What are the limitations of the technology?”).

**What feedback does the dancer get?**

Our test highly restricted the interaction of the dancer with the displayed graphic visuals. The dancer could test separate movements and follow the graphics on a standard screen at the same time. However, for real dancing or for short-sighted people using that small screen denies any interaction with the output graphics.

**Are there interferences between the output the technology creates and the input?**

Currently, this could not be tested. However it can be argued, that, if a projection of the graphics was used this should not interfere with the camera as it is infrared-based and the projection would work with the visible range of light.

**What material of costumes work with the technology?**

An unexpected observation was made–certain materials did not work with the camera. At some stage one of the dancers appeared to have no upper body. Her t-shirt did not register with the camera.

At this stage, the camera has trouble working with some floor-lengths skirts.

**What are the extrema regarding our parameters? Does the technology suffice to perceive the parameter even at their maximum/minimum?**

We analysed three parameters: range of the camera, speed of capture and the camera’s angle of view. The range that the camera reliably could detect the dancer’s depth in space was limited to a 5m x 5m space. The dancer could not be properly detected if they were closer than 1.5m to the camera. We did not measure a number for the angle of the camera. Instead we tested if the camera could cover a, for the professional dancer, reasonable amount of space from a center-stage angle.

We were not entirely satisfied with some of these limitations. When at that stage the Kinect camera became available and suggested to be more promising, we exchanged our technology from the TOF to the Kinect camera.

While we have not yet undertaken similar systematic tests with the Kinect camera, experimenting with it and checking especially targeted for the limitation present in the TOF technology, the Kinect camera appears to be more appropriate for our purposes.

### REQUIREMENTS: CREATIVE IDEAS

#### Participants and Method

The process used for the identification of parameters was the same organic informal process that was used for identifying the input parameters. As a diverse group of researchers from a variety of disciplines, collaboration and exchange of ideas was a challenge. Meetings and discussion occurred involving various combinations of the computer science researchers, graphic designers, the professional dancer and the Human-Computer Interaction researcher. Despite difficulties in attempting to bridge the creative / technology boundaries, progress was made.

#### Perception

The use of computer vision technology allows for exploring new modes of perception. The professional dancer sought to explore ideas such as “how we are perceived”, “how we perceive” and “how the technology perceives”. Creatively, the use of interactive technology invites conversations between the computer and the performer, and the performer and the audience.

#### Audience as Input Source

As part of a wider performance system, the professional dancer was intrigued by the idea of taking visual input from the visible reaction of the viewing audience, as they received the work. “Faces would be our clue to how the audience perceives the situation of performance. Is it funny? Is it boring? Is it serious or sad?” The use of computer vision to gauge the response of the audience members invites the establishment of a form of computer mediated communication (CMC) between the audience and the performer, as well as allowing the audience to directly participate in creating the visuals.

#### Delay in Movement

Initial experiments with the TOF camera highlighted the inability of the device to respond to rapid movements, such as those produced by the dancers. However, the dancer’s response to the technology limitations was one of acceptance, and even creative inspiration: “The camera cannot ‘keep up’ with the fast movement [...] but I really like the effect. Almost like your own shadow is following you and you are trying to catch up with yourself [...]”.

---

### Table 3. List of Tested Parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle</td>
<td>The angle from which the camera can still register input</td>
</tr>
<tr>
<td>Body parts</td>
<td>The differentiation degree the camera can detect (e.g. limb, arm, hand, finger)</td>
</tr>
</tbody>
</table>
Partnering
An ability to record and playback choreography in 3-D inspired ideas about “two dancers dancing separately, but the visualization combining the two, perhaps dropping one out at times...”. The idea of traversing barriers in both space and time to enable collaboration between performers is one that holds a great deal of interest for a wide variety of artistic practices, including dance and music.

Energy
In considering the motion of the dancer, discussion and creative work was carried out exploring the expression of their energy. Energy was seen as being involved in any movement, and thus a worthwhile place to investigate. Among the ideas, kinetic energy and atomic energy were loosely adopted as the basis for showing the energy state of the dancer; thus more movement would be interpreted as high energy, triggering high energy visual responses; low energy would create more calm and reflective visual responses.

One of the themes common to all the ideas discussed was to be able to incorporate a wider range of human input into the performance through the use of various computer vision and other sensing technologies. The incorporation of depth-based computer vision in particular, allows for a tighter integration of the dancer and computer generated visuals; one that responds to nuances of the individual performances rather than being a rigid controlling structure in which the performance occurs.

REQUIREMENTS: SYNERGY OF TECHNOLOGY AND CREATIVITY
In December 2010/January and February 2011, the project had a summer research student experimenting with the technology and creative ideas over a ten-week period.

Out of the variety of possible input parameters and creative ideas, a narrowed down set of parameters and creative ideas had to be selected. This was necessary in order to enable the student and researchers to handle an element that they could begin working on.

Thus, the idea was born of giving visual expression to the kinetic energy that the dancer had. A prototypical work was intended that as the suggested outcome was a view of the varying energy states across the body of the dancer.

At that stage, one of the Computer Science students had been able to create a library for the processing of skeleton data from the Kinect camera. The other Computer Science student was able to create a library for 3-D data processing from Kinect camera data.

This made it possible to select a set of input parameters that describe the body skeleton of the dancer. Nodes, given through coordinates, represent joints of the body (see Figure 2).

The joint coordinates were analysed frame by frame. Depending on the change of location of each joint, it was assigned an energy value. A further change of location represents a higher energy value.

These energy values could be creatively displayed in several ways:

Particle effects were the beginning of the idea of representing the energy in a kind of electron/atomic model; that the energy of the dancer would be partially lost into space through the particles the particles would change orbit states depending on the level of energy of the dancer—as exhibited through movement (see Figure 3).

CONCLUSION: LESSONS LEARNED
Some of our initial set of questions could be answered more thoroughly, others require further research. The answers to the sub-questions we asked lead to the answer of the overall question, of how the technology supports the development of new creative patterns:

Input Parameters
(Question 2 and 3) The initial research phase did not identify the one and only suitable well-defined set of input parameters. However, through an experimental process with a dance expert and discussion with several other dancers,
we found an option of a first prototypical input parameter set.

With the use of the skeleton data and 3-D data, all the, with the TOF camera, analysed parameters should be possible to determine using the Kinect technology.

**Technological Limitations**  
(Question 4) The technology used is a fast developing technology. Changes to it from industry and the programming community were faster than the process of our research. This made working with it challenging. Several times, we abandoned paths gone as a new development opened up new--more promising options. We ended up with 3 different libraries that do not yet map together. So probably, at some point a decision has to be made to stop looking at new developments and continue working with the current state of our system.

We started off our research with using the TOF camera. However, we had to realize that working with it brought about several challenges: It was not suitable to detect movements the dancers made when doing floorwork—a crucial feature of contemporary dance. Moreover, we had to observe that it did not have a sufficiently fine resolution in order to be able to perform gesture recognition. The biggest disadvantage it showed was a delay in picking up movement, such that real-time processing of fast dance movements was literally made impossible. In the course of our research the Kinect camera became available. It suggested to be suitable for targeting the problems identified for the TOF camera. Moreover, it turned out to be easier programmable than the TOF camera.

Both cameras prescribe a limited space for the dancer. Beyond that they become imprecise in regards to the depth perception. A range of roughly 5m x 5m was determined to be reliable (Kinect camera).

**Question 5: Interaction**

A limitation that influences creative input is the problem that not all materials will be picked up by the camera. Certain costumes such as floor-length skirts disallow the camera to identify the dancers joints making an interaction impossible.

An unexpected insight was that some technical limitations did not pose problems. In contrary, they sparked creative ideas in the professional dancer who then used the originally unwanted technological effect to the benefit of that idea. For example, a delay in perception of movements lead to the idea to dance with your shadow that follows the performing artist.

Another revelation that surfaced was that the initial list of input parameters only regarded the dancer’s interaction with the camera. However, some of the creative ideas asked for an interaction of the audience with the camera.

**Questions 6 and 7: Initial Creative Ideas**

The requirements section of this paper, sketched initial ideas that the dancers and graphic designers involved considered and partially realized. However, their further discussion goes beyond the scope of this paper.

**Interdisciplinary Collaboration Challenges**

An observation that went beyond the questions we had posed regarded the collaborative process. Even though, all involved parties were highly motivated to collaborate, we repeatedly had to clarify misunderstandings. This was due to the different thinking processes. A planned linear analytical process and an organic iterative intuitive process initially appeared to be mutually exclusive. On the one hand, a forced level of planning slows down creativity. On the other hand, giving up structure made following research goals harder.

However, with time working models were found that were suitable for all parties involved (such as installation of a chat program such that sudden creative ideas could be communicated whenever they came to the lead Graphic Designer).

Apart from the communication challenges and different work processes, the interdisciplinary character of the project put the participants into the position to go out of their comfort zone.

For example, the professional dancer remarked that she was “not sure about computer stuff because it changes all the time”. She tried to understand the workings and limitations of the technology, but within that fast-paced development process of the technology in question this was a big ask.

Moreover, one graphic designer and computer scientist had to get used to the physicalness of dance with which they were unfamiliar in their workspace.

**Question 1: Creative Suitability of Technology**

The main question asked was how the technology can further creative dance and graphical works.

In the collaboration between Dance, Graphic Design and Computer Science, we could observe that our approach—a dance-driven 3-D camera input—is well suitable to be used for the creation of immersive creative works that represent the state of our current world, the information age–lifes, intermeshed with technology. If fine and performing arts are to follow people of today, they have to embrace such cross-domain experiences. The produced prototype of the interactive technology was found to be suitable for such experimental work as it broadened the horizons of the participants involved and thereby inspired them to look for further work techniques, thought patterns and this way gives birth to new creative thinking patterns.

**FUTURE WORK**

A step forward for the functionality of the 3-D interaction would be the mapping of the existing 3 libraries onto each other to enable the use of all of them within the project.
This would enable us to exploit skeleton data and depth data in the same graphical visual.

In future research, the identified parameters will be used for the development of a more refined prototypical realization of interaction mechanisms for the dancer with the 3-D camera undertaken by the computer science department. At the same time the computer graphics department will continue to work on the artistic content of the output. The Human-Computer Interaction department will research how the dancer can successfully interact with input and output medium. Questions arise such as if the dancer would dance with the virtual dancer/visuals that a certain project would contain or whether the dancer would dance despite of having no awareness of them. In the first option an appropriate output had to be found that enables the dancer to interact with the graphic creation.

The full potential the technology offers in respect to dance performances, remains to be fully explored. This requires a longer phase of exploration through choreographers and dancers with a stable version of the software and hardware setup easily available for them to experiment without limitations.

One further option for the employment of the technology is audience integration into the creative process. The audience reaction or their movement could be used as feedback into the creation of the output.

Currently, there are negotiations to extend the project to a collaboration with the Music department and/or Screen and Media Department of the University of Waikato.

The final goal for the project is the development, evaluation and use of a tool that allows for the easy creation and presentation of holistic performances that involve dance, music, and graphics as an immersive experience for both the audience and the performing artists.

ACKNOWLEDGMENTS
We thank Andreas Löf and Paul Hunkin for their programming contributions.

We thank Bill Rogers and Dr. Adrian Dorrington for technical assistance.

We thank Dr. Karen Barbour for her advice.

For the classical ballet photos, we thank Claire Gray and Alex Hitchmough. We thank Komiko Silver for the Contemporary Dance photo (From In-between Heartbeats, stellaris dance nz, Photographer: Komiko Silver, Choreographer and dancer: Marie Hermo Jensen).

REFERENCES


