

Flexible surfaces: shadow as a continuum of dancers

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Abstract

This paper presents the results of experimentation with light and shadow drawn from my practice-led PhD in Dance. I worked with three volunteer dancers to examine interactions between dancers and their shadows projected on the floor surface. In his book, The Fold: Leibniz and the Baroque, Gilles Deleuze (2006) developed a study on folds and surfaces linked with time and space. I use this theory to propose the idea that the shadows of dancers projected on the floor suggest an extension of their bodies. Images depicted in photographs illustrate key discussions of this article.

The experimentation was based on instructions given to the dancers. I directed them via verbal, textual and image stimuli to improvise movements in space. Verbal stimulus involved asking participants to move in a specific way and to a specific location in relation to a single light, which happened in parallel with textual and visual stimuli. Textual stimuli included small texts taken from the book Seeing Dark Things: The Philosophy of Shadows by American philosopher Roy Sorensen (2011). The image stimulus was combined by photos of a person's shadow, a sphere's shadow, and Origami Shadow, a shadow work by Kumi Yamashita (2011). This paper depicts methods of creating shadow from dancers that can be used as a choreographic content.

Keywords: dance, light, shadow, surface, interaction, space

Introduction

What happens when shadows do not suffice to play the role of a passive double figure? It was from this enquiry that I conducted experimentation in a studio, directing dancers to move in relation to single lights to create shadows on the floor. This led me to the understanding that shadows can play active roles, as suggesting extensions of the dancers' bodies, and dynamics.

The studies on the angles of light, locations and positions of dancers, enabled me to observe shadows as active substance. By this, I mean the creation of shadows of varying shapes from human and non-human figures, which dynamics not always suggest following the movement of the dancers. The discrepancies of shape and/or dynamic between dancer and shadow revealed the potential of investigating shadow, artistically.

The experimentation in the studio took place in March 2015, and I explored two *Fresnel*¹

and two *Profile*² reflectors fixed, respectively, on the boom, in the side of the stage, and on the rid. Grey flooring was used to facilitate the examination of dark shadows on it. In this paper, I present the methods employed in the experimentation, and the process and findings of analysing the shadows. This paper aims to be relevant to artists interested in lighting design.

Setting the space for creating shadows

The experimentation occurred in a dance studio 9 x 10 meters, with grey flooring, and with black curtains around, masking the clear walls. The grey flooring was important to the creation of shadows, due to the relation of contrast and occurrence. Black flooring would reveal a shadow less dark, compromising a deeper understanding of its behaviour. The black curtains were also relevant as they facilitated the maintenance of dark areas of the studio, as

¹*Fresnel* is a soft-edge spotlight with variable beam angle, consisting of a lamp, reflector and stepped lens and barn doors that help to control unwanted spill and give shape to the beam. For further detail, see: Palmer, S. (2000) Stage Management Lighting & Sound – Essential guide. London: Hodder Education

²*Profile* is a hard-edge spotlight with variable beam angle, consisting of a lamp, reflector and one or more 'plane convex' lens and shutters that shape the beam. Gobos can be inserted in the 'gate' to project images. An iris can be inserted to make the beam smaller. It is a very versatile and complicated type in comparison with other conventional beams. For further detail, see: Palmer, S. (2000) Stage Management Lighting & Sound – Essential guide. London: Hodder Education

the lights were used as single spots. In this sense, the shadow could be observed in parallel with the surrounding darkness.

Participants included a male dancer that has very white fair skin and a height of 5'8", and two female dancers: one that is 5'3" respectively 5'6" with medium-dark skin. The selection of the light reflectors followed a technical understanding from past experiences of working as a lighting designer: with the *Fresnels*, I created soft light with blurred borders, and with the *Profiles*, and hard light with defined borders. The location of the equipment is varying from the right side (*Fresnels*) and the top (*Profiles*) of the stage, followed by a desire of experimenting with shadows from different distances. The light in the side was placed on a boom approximately 1.5 meters from the floor, and the light in the rid was 5 meters away from the floor. This relation light-floor indicated that:

[...] white objects reflect much of their incident light while black objects will vary in appearance as the light varies. Since a black room absorbs more light than a white room, less light is needed to see in a white room. As the light dims in a black room we have more trouble seeing the shadows cast by objects. Often such shadows play a critical role in defining the object. (Sorensen 2011: 30)

The fact that I worked in a dark room with grey linoleum flooring influenced my adjustment of the intensity of light. As I did not want too much light to be reflected on the floor, the lanterns were set at 50% (from the top) and 40% (from the side). The difference in the intensities of lights is considered in relation to with the floor: the closer the lantern was from the floor, the brighter the light was. On the other hand, the farther the lantern is from the floor, the more diffused and less bright the light was.

The intensity of the lights was also thought not to illuminate the dancers too much, but rather to contribute to the revelation of their shadows in the first plan. Since shadow was the subject of the research, there was no reason for the dancers to be fully illuminated. By improving movements freely in low light, dancers were encouraged to move without pretension of showing virtuosity.

In terms of 'improvise movements freely', I agree with Susan Foster's comments that 'Improvisation provides an experience of body in which it initiates, creates, and probes playfully

its own physical and semantic potential. The thinking and creating body engages in action (Foster, 2003: 8). I aimed to conduct the dancers to play with their physical movements, without concerning them with reproducing codified steps, as seen in dance styles such as modern and classical dance. This freedom of movement was believed to generate diverse movement vocabulary, which would contribute to my examination of a range of shadows.

In addition, the angles of the lights were also studied. *Profiles* were aligned at steep angles, and *Fresnels* at shallow angles. In combination with the locations of the lanterns, the angles produced two different shapes of light in space: while the *Profiles* had a circular shape, the *Fresnels* had a tunnel-like shape. These alignments considered an increase in the possibilities of creating flexible shadows.

The two tasks for the creation of shadows

The first task of the experimentation included verbal and textual stimuli, as I directed dancers to move in relation to the side light (*Fresnel*). The textual stimulus derived from extracts from the book *Seeing Dark Things: A Philosophy of Shadow*, by Roy Sorensen (2011). I asked the dancers to interpret the text in a way that feeds their improvisation. Three small pieces of paper were given to each dancer:

1. '[...] when the sun is behind you, a cloud appears to cast a shadow that is smaller than itself' (Sorensen, 2011: 109);
2. '[...] shadows cannot be defaced' (Sorensen, 2011: 179);
3. '[...] we use shadows to establish shapes, and movement, and relationships between objects and the rest of the environment' (Sorensen, 2011: 15).

After a few minutes, allowing the dancers to think about the quotes, I asked them to improvise near and far from the side light. I observed that when the dancers moved near the light, they became interested in interacting with their shadows. This led them to repeat movements, which I found to be uninteresting, as it limited the flow of improvisation. As Lou Michel advances, 'Placing a frame between the walker and a visual objective makes the objective more effective by blocking out any distracting influence of neighbouring visual activity' (Michel, 1996: 211).

To make the dancers less attracted to their shadows, I asked them not to worry about their shadows and to become more attentive to my instructions. Following that, dancers were requested to explore different directions and rhythms, which allowed them to focus on their movement, rather than their shadows. Particularly, I asked the dancers to slow their movement and to analyse shadows more closely.

In addition, the dancers were requested to move far from the spotlight. This enabled me to notice how the size of shadow changes accordingly to the location of the dancer. The distance of the dancer to the light was also important to reflect on shadow, as varying between human and more abstract figures.

The second task included a request for dancers to improvise movements from their interpretations of the images constituted by the shadows, inside and outside a spotlight created by the *Profiles* in the rid, at a steep angle. Similar to the first task, each dancer received one image and was asked to reflect on them. Participants were given the following images:



Fig. 1. Anonymous (2015) Google

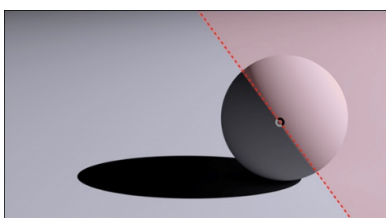


Fig. 2. Anonymous (2015). Google

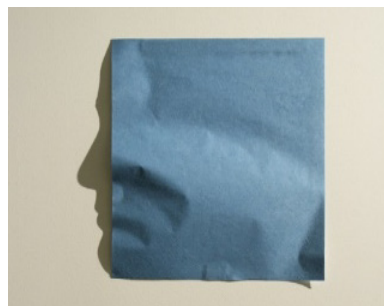


Fig. 3. Kumi Yamashita (2011). *Origami Shadow* (courtesy of the artist)

The provided images were chosen as I reflected on some passages of Sorensen's book. One idea I wanted to test was Sorensen's argument that 'to move my shadow, you must alter other things – physical objects such as my body or the lamp that illuminates me' (Sorensen, 2011: 80). While the anonymous images (figs. 1 and 2) provide a more technical approach of shadow, especially in figure 2 in which a line marks the limit of light to create shadow, *Origami Shadow*, by Kumi Yamashita (fig. 3) is intriguing.

For the analysis of two people, (fig. 1) I tried to call to the attention of the dancers of how their shadows are connected to everyday life, and how shadows could look distorted. From this, I questioned: Would dancers explore strategies of distorting their shadows? For the image of the sphere, (fig. 2) I aimed to call to the attention of the dancers about the limit between light illuminating and revealing the shadow. From this, I reflected: Would dancers explore strategies of creating shadows in relation to their position to the light? For the artwork made by Kumi Yamashita (fig. 3) I aimed to call to the attention of the dancers of how a shadow can look drastically different from the object from its origination. As I enquired: Would the dancers explore strategies for creating more abstract shadows, which do not resemble human figures?

Shadow as extensions of dancers: experimenting with a side light

Before delving into the analysis of the experimentation, it is important to present a concept of surface, which facilitates the understanding of shadow as extensions of dancers. As Gilles Deleuze notes, 'Painted and nonpainted surfaces are not divided as are form and content, but as the full and the void in a reciprocal becoming' (Deleuze 2006: 40). In the

context of my practical research, I assume that surface is the floor, which I examine the dancers' shadows.

Deleuze proposes that the surface is composed of form and content, which intrinsically reveals ways of becoming, of revealing figures. The idea that surface could reveal figures, that are flexible by nature, was noticed in my experimentation with light and shadow. I observed that the creation of shadow itself, provided interactions with the dancers as shifting roles of reference and presence.

This can be related to Sorensen's casual concept of shadow, which means that a shadow is a result of an object that blocks a light. However, Sorensen also proposes that shadow does not have a literal correspondence with the object that originates it: 'Shadows are followers of the object that cast them. Parts of the follower correspond to parts of the leader; consequently, the motion of the caster's parts accounts for motions of the shadow's parts' (Sorensen 2011: 12). In this regard, for the examination of the shadows in my experimentation, I focused on the possibility of shadow having some aspects partially copied and partially transformed by the dancer's body.



Fig. 4. Character shadow. Dancer: Courtney Rowlands. Photo: Flaviana Sampaio

For the creation of a 'character shadow' it is necessary to consider the cast feature, partially joined with the dancer. The 'character shadow' appears to be the profile of a man wearing a hat

(the hat is the dancer's lower body, adding a sense of three dimensionality to the figure). The reversed mirror relation, in which the dancer's finger is held up, although in the shadow it is down, highlights shadow as something different from its originator (fig. 4).

A crucial aspect of this type of shadow is suggesting a figure totally different from its originator in terms of physical appearance and motion. This involves not only a detachment from a passive extension of the dancer's body, but placing the dancer in a secondary role, as an ordinary material. Deleuze considers the relevance of environment before individuals, 'It is space, time, and extension that are in the world on each occasion and not the inverse' (Deleuze 2006: 76). In relation to my experimentation, the shadow is made available and attractive before the dancer.

The shadow in the 'character shadow' claims attention to itself, as if the dancer was a secondary component. The idea of shadow as a continuum of the dancer proposes a connection from disparity rather than similarity. The dancer's legs represent the man's hat, but at the same time, do not have a strong presence in the figure. One could affirm that the dancer is covering the hat's shadow, for example, when considering that the light comes from the top. However, the light source is from the side, back-lighting the dancer and causing an ambiguous link in which the dancer could be distorting the shadow or creating a dialogue with it.



Fig. 5. Massive shadow. Dancer: Rhiannon Gainall. Photo: Flaviana Sampaio

In the 'massive shadow' the dancer moves next to the side light, which contributed to the irregular shape and generous size (fig. 5). The

shape of the shadow does not resemble the dancer, because of her position of not facing the light. The fact that the dancer's lower body is illuminated can be viewed as the main reason for the shadow to have an unfamiliar shape.

On the relation between light and shadow, Sorensen argues that 'A beam of light pierces a shadow without being diminished by the shadow' (Sorensen, 2011: 204). In the case of 'massive shadow', the diffused light allows gradations of shadow that dialogue well with the surrounding darkness. In fact, diffused light does not crop the space, and does not produce straight lines or clear boundaries on the floor. In this regard, the creation of shadows reinforces the distance of the dancer to her shadow: in the area next to the dancer, such as close to her arms, the contour of the shadow is more defined than in the rest of the figure further away.



Fig. 6. Long shadow. Dancer: Rhiannon Gainall. Photo: Flaviana Sampaio

The creation of 'long shadow' provides reflections on how the distance between light and dancer affects the shadow. In particular, the shallow angle facilitates the creation of long shadows, as it illuminated the floor in drawing a tunnel-like shape in space: 'When an extended light source is near the object casting the shadow, the light rays are not parallel' (Sorensen 2011: 109).

As the dancer is laid on the floor with the right leg up, it effectively blocks a reasonable area of light. By the location and position of the dancer, blocking the rays of light irregularly, the shadow outcome is not a human-like-figure, but long lines that cross the whole stage (fig. 6). Along with it, the gradual darkness of the room,

invading the shadow, partially connotes a harmony between the figure and the surface.

To expand the findings on shadows, I also conducted dancers to feed each other interpretations of the given texts and images. I asked them to work in pairs (the third dancer would have a break), one being the mover and the other being the reactor. The mover would start improvising movements, whilst the reactor would observe and interfere, by asking for repetition of movement or expansion of some ideas (similarly as I conducted them). In this sense, I noticed that the improviser started to create choreographic material, which was not the main aim. I asked them to finish this practice in duos, and enjoy a few moments playing with their shadows, without talking or doing anything that could look as choreographed (such as patterns of movements codified). This request was valuable as to observe a change in the dancers, as one of them started to use his shadow to interfere in the shadow of another one.



Fig. 7. Blurry shadow. Dancers: Courtney Rowlands and Christopher Sullivan. Photo: Flaviana Sampaio

'Blurry shadow' was created by two dancers: one near the light source produced the blurry effect in the second dancer, farther from the lantern. The two shadows seem to be joined, as if united; they belonged to the dancer far from the light (fig. 7). Strategies like this are relevant to the exploration of shadow as reference of the dancer, as if, by extension, we expected shadow to follow a specific logic. The blurred shadow created by the dancer near the light would be a key element to promote unexpected outcomes in the interaction between dancer (the one far the light source) and the shadows.

Regarding spaces, Deleuze argues “[...] For ages there have been places where what is seen is inside: a cell, a sacristy, a crypt, a theater, a study, or a print room” (Deleuze 2006: 31). The concept of ‘blurry shadow’ dialogues with Deleuze’s idea. Here, shadow is not only to be seen in a dark space, from the grey flooring, but also to be noticed as a flexible entity. The dancer near to the beam moves his hands several times, but the shadow does not seem to modify: firstly, due to the partial cover of the shadow with defined frames, and secondly, because shadow with blurred frames is not literally connected to the dancer in the middle of the stage in terms of motion, which makes a recognition of movement difficult.

The light at a shallow angle, approximately on the dancers’ hips, made it interesting to ask dancers to move next to, or on the floor, as they were next to the light. The proximity of the dancer to the light caused a direct interest of dancers to react to the light, as a close partner. On visual communication, G. Harry Jamieson points out that ‘Light [...] is the first stage in the whole process of visual communication, spanning the distance between eye and object; an inaugural carrier system of information ‘about’ something rather than its ‘physical being’ (Jamieson, 2007: 13). In this sense, dancers became intrigued to perceive the behaviour of light in parts of their bodies.

The improvisation of dancers moving inside and outside the circle of a spotlight, led me to the comprehension that the boundary of the spotlight, the grey zone that reveals the shape of the light, were good for the dancers to improvise movements. This is because they were not too visible, making the shadows more noticeable. In addition, I observed a logic for the changing of the gradations of shadows: When the dancers were in the brighter area of the spotlight, they created dark shadows. In contrast, when they were in the peripheral area of the spotlight, they created shading shadows.

The improvisation of dancers outside the spotlight aimed to contribute to the creation of shadows through a more deepened reflection of the nature of light to be reflexive. Whilst the light marked the floor, with clear boundary, the act of it reaching the grey flooring facilitated the dispersion of light around the spot, by reflection. This was crucial to diminish focus on the interaction between dancer and shadow, considering light as a secondary component.

Shadow as extensions of dancers: experimenting with a top light

‘Emerging shadow’ suggests perspective as if it was getting out of the floor (fig. 8). The presence of defined and blurred frames reveals a transitional figure: the right-hand shadow is less defined than the left one. This is possible due to the distance of the dancer’s arms to the top light: the closer to the light (and farther to the floor), the shadow becomes more blurred; the farther to the light (and closer to the floor), the shadow becomes more defined.



Fig. 8. Emerging shadow. Dancer: Rhiannon Gainlall. Photo: Flaviana Sampaio

In articulating paradigm and surface, Deleuze outlines that ‘the search for a model of the fold goes directly through the choice of a material’ (Deleuze, 2006: 42). This consideration enables a comprehension of shadow to be the reference of the dancer, not only because the dancer looks at it, but also because the figure brings a sense of perspective, as if the floor had depth underneath, as a hole.

In addition, the ‘emerging shadow’ proposes a reflection on dynamics. In comparison with the dancer, the shadow looks dynamic. Whilst the shadow suggests a twist movement, the dancer is stiff, and staring at the floor. The stillness of the dancer gives room for the analysis of the dynamic of the shadow, as it is an extension of the dancer.



Fig. 9. Shadow human parts. Dancer: Rhiannon Gainlall. Photo: Flaviana Sampaio

'Shadow human part' suggests an extension of the dancer's arm (fig. 9). The details of the dancer's hand are impressive, since the fingers look disproportional in comparison to the size of the arm and the head shadow. The comparison of sizes in 'shadow human part' indicates a dynamic of searching for proportionality.

This behaviour of shadow can be linked with a matter. Deleuze argues that 'a matter is a buoyant surface, a structure endowed with an organic fabric' (Deleuze 2006: 131). The search for proportionality in 'shadow human part' recalls a certain order and interconnection between the parts, as in a live system.



Fig. 10. Traces of shadow. Dancer: Courtney Rowlands. Photo: Flaviana Sampaio

The 'Traces of shadow' was created from the presence of the dancer in the peripheral area of the spotlight (fig. 10). In this regard, the effect of shading is caused not only by the interaction between the dancer and the lighted surface, but also because of the darkness of the studio. The gradation of shadow imbedding the darkness is a key issue:

The umbra of a shadow is an area in which the light is entirely blocked. The penumbra is the gray zone in which the caster only partially blocks the light. If the lamp were a point source of light, then there would be no penumbra (given we ignore a marginal contribution from diffraction). But the artist's lamp is inevitably, an extended light source, so there will be a penumbra. (Sorensen, 2011: 72)

As could be assumed, all types of shadows arising from this experimentation are penumbra because of the distance between the lighting equipment and the dancers that does not make possible a full blockage of the light. However, 'traces of shadow' highlights this feature in a specific way, since it contrasts with peripheral and with low illumination.



Fig. 11. Unknowing shadow. Dancers: Christopher Sullivan. Photo: Flaviana Sampaio

The 'Unknowing shadow' was created as the dancer moved in profile, illuminated from the back. This generated a distorted shadow which recalls an ambiguous figure. For instance, it can be interpreted as a small child or a monster (fig. 11). This ambiguity of the interpretation of the shadow can be related to Deleuzes'

consideration on environment, space, and time in which, 'The play interiorizes not only the players who serve as pieces, but the board on which the game is played, and the material of the board' (Deleuze, 2006: 76).

The 'play' can be considered as the conjunction between shadow and dancer that inevitably recalls comparisons between the two. In this context, the players are the figures that can be interpreted from the shadow outcome that calls attention for differing drastically from the dancer. Here, the shadow activates the imagination, as one can find it difficult to point out a unique image in interpreting it.

Conclusion

This paper has shown that lights from side and top spots of the stage are useful for the creation of shadows on a grey floor that works as a continuum of dancers. The experimentation in the studio provided studies on shadows like

human figures and others. The shadows, unlike human figures, are diverse, and often suggest ambiguity.

Shadows created by lighting from the side have been examined as useful in distorting the dancers' appearance in terms of shapes, shadings and frames. Regarding the dynamic effects, this analysis suggests that the shadow's movement does not follow a fixed rule. It can be like the dancers' movement or be completely different, which I found important to develop further.

Lastly, shadows created by lighting from the top, were also pertinent to discuss patterns of shapes, shadings and frames. In particular, this investigation promoted studies on the borders of light/shadows. In terms of categorization, shadows created from side lights are abstract. On the other hand, shadows created from top lights are more representative.

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