

LICIA CALVI, MARLOEKE VAN DER VLUGT & SOFIE RONDUITE

Body as Play

Abstract

This paper investigates the notion of embodiment in relation to technology, interactivity and performance. It aims at determining when the observer of an interactive system becomes a player and to what extent they are also performing. Our paper therefore questions notions of play and performance, and relates them to phenomena like embarrassment, social norms and social acceptability. We examine these premises in order to find out what triggers people to play in a public setting, and to overcome that invisible but persistent social threshold to perform in public by getting involved in an interaction. This is where the distinctions between performance and play become blurred. The audience around the player is taken as the discriminant supposedly inhibiting factor to determine whether people would step into the interaction and play: are they the passively observing public of a performance or the actively supporting participants eager to play themselves?

In order to analyse play in relation to the above mentioned concepts, this paper reports the results of observing people play with an artwork for bodily interaction that was exhibited at a dance festival in Amsterdam. The artwork, called RollingStairs, consists of two unsteady balancing objects in the form of wooden stairs that are both connected to a different speaker box. By standing and moving on the stairs, the connected sound clips change. Interaction consists in balancing, and this requires collaboration between two participants (one on each stair). The goal is that both participants trigger the same sound while balancing on the stairs, by enacting different forms of collaboration between them.

By looking at the way people interact with the artwork, we discuss what body as play means and, in particular, what triggers them to play using their body in public in a semi-public space.

Introduction

Notions of play, playfulness, and performance are more and more used in designing interactive systems. The 'body as play' (Müller, 2015) is what these notions focus on: here, the body is not simply used to connect with interactive systems using gestures for example, like in many performative interactions in public settings (Williamson et al., 2014). Nor is it used to play *tout court*, like when a device is used to measure certain physical abilities like running and improve them (Müller, 2015). Neither is it used to identify certain emotions to inform the design of that particular medium – like in psychophysiological measurements for games, as for example in 'How psychophysiology can aid the design process of casual games: A tale of stress, facial muscles, and paper beasts' (Gualeni, Janssen and Calvi, 2012). With 'body as play' we

refer to the body as part of the play, as a way to get to know the world around us, to sense our environment and to adapt to it accordingly. In this way, the body becomes the means to perceive the world, to interpret and to experience it. Embodied interactions therefore can facilitate and increase our understanding and our learning of the world and of ourselves (van der Vlugt, 2015).

During the exhibition at Cinedans, a dance film festival at the EYE museum in Amsterdam, we observed people playing with an artwork designed by Marloeke van der Vlugt - in collaboration with Waag Society Amsterdam - that requires two people to physically interact. Our goal was to investigate how people interact in public when they have to mainly use their body to make sense of the interaction and to rely on their body to communicate with another player. Indeed, in this situation, the physical and social setting in which the interaction takes place seems to have a discriminant role in encouraging or inhibiting people from playing, to shift from the role of passive observers to that of active participants (or performers). We were interested particularly in unveiling the impact of the social context, that is, how the audience around the players watching them play may affect their interaction with their other player and their willingness to play in the first place. Specifically, we were interested in whether the observers' presence and behavior encourage or inhibit the players. We wanted to research whether there is a correlation between the size of the audience, its nature (as a known or unknown public and the extent of this anonymity) and the self-awareness of participants. We were interested in verifying if playing was less constrained for people in this setting, in which the body was central in the experience to play, in fact if it was 'body as play'. Playing and at the same time interacting with another person in a semi-public space with an audience watching them may have determined a different experience for players than when they have to perform, and not just to play in front of an audience (Calvi, 2015).

Here the notions of performance and play are at stake. Previous studies of performance in interaction design stress that when people interact in a performative interaction in public, they enact with what Dalsgaard and Koefoed Hansen call 'performing perception' (2008). 'Performing perception' means that the player is aware that, while playing, they are in fact performing in front of an audience. And it is precisely this awareness that makes the players play (perform in fact) in the way they do. The players are aware that they are playing in order to be watched by an audience. So, in fact, they perform their perception of the audience's reactions to their own performance. This notion therefore entails the idea that performance always implies some form of play, for example, of playing in front of an audience, whereas play may not be performance. Many scholars have stumbled against this distinction and have resorted to the notion of performative play (Fischer-Lichte, 2008; Schechner, 2003).

Play is a complex concept (Huizinga, 1949; Caillois, 1961). Play as a form of action has been explored within a wide range of disciplines including biology, psychology and cultural studies, each of which has developed their own specific approach. In this study, we focus on body as play: the body is used to

make sense of and interact with the technology and the player manipulates their body to communicate with the other (both the player and the audience). As such the body becomes the interface to interact with the technology and with the world around. Before delving into these notions, we will describe the artwork that triggers the body as play.

RollingStairs

Created by Marloeke van der Vlugt (2014), the installation RollingStairs (Figure 1) was made during an artist's residency at Waag Society, Amsterdam. Her goal was to develop a challenging, interactive installation for educational purposes to enhance young people's learning. She aimed to achieve this via participatory embodiment, using the interactor's corporality, thus stimulating them to sense the world we live in physically and decipher any meanings it might have. Her focus was on 'we as body and the body as the centre of the process of action and perception' (van der Vlugt, 2014).



Figure 1: RollingStairs. Photo taken by M. van der Vlugt during a test set up in summer 2013 at the Theatrum Anatomicum based in Waag Society Amsterdam.

RollingStairs consists of two unsteady wooden stairs that are both connected to a different speaker, placed at ear height. The stairs incorporate accelerometers that sense the player's moves. By balancing on the stairs, various audio samples are triggered, so that by moving them, the music changes. Interaction consists in balancing, but to go through the various levels requires collaboration between two participants (Figure 1). The goal of the interaction is that both participants create the same sound while balancing on the stairs. In order to achieve this they need to use their bodies in synergy both with each other and with the stairs. When the same sound is found, silence is reached when both participants can hold the position they found for three seconds. This can get them to the next level of (in)balance where different tunes are played. The stairs encourage participants to take up opposite roles: leader or follower. Depending on the role that is adopted, different forms of collaboration are enacted: helping each other, mirroring (leader – follower reacting to each other's position) or working together towards a mutual goal (musical composition).

RollingStairs evokes bodily awareness and 'corporal literacy' in each player through incorporating different senses and body parts. The interaction emphasizes the natural functionality of our bodies, like standing up, climbing, stretching and balancing, questioning 'regular' human computer interaction (van der Vlugt, 2014). The technology provides a feedback loop that stimulates the participant to explore their relation with their own body through interaction with the stairs in the first place, and then with the other participant / co-player.

Comparing this installation with other devices, using the body as an interface like Wii Fit Plus (n.d.), the feedback loop is unique. The participant does not only need to focus outwards, towards the stairs and towards the other player. RollingStairs also constantly leads the focus back to the sensation of the moving body itself. In this respect, we cannot only talk of performers, when we refer to the people interacting with RollingStairs, but of players. Because they are not only performing for others to watch them (Dalsgaard and Koefoed Hansen, 2008), but are also playing with their own body and in doing this, they make sense of themselves, of each other and of the world around them. This is clearly reflected in how the installation is programmed: RollingStairs is programmed to trigger single notes or parts of melodies. Collaboration may lead to melodic lines, rhythms, musical compositions and silence as the ultimate composition. Alternately, the stairs have to be silenced by the player(s), because taking silence is seen as the ideal state-of-mind to focus on the embodied self.

Body as Play: 1

The body as play, as presented in the installation RollingStairs, engages the body in two ways: the players are forced to focus on their bodies-of-flesh-and-blood (how to keep balance) while being aware of their communication with the other player and the people around them. RollingStairs investigates how to use the body as interface (body as play), as a way to communicate and interact with others by means of a technological device, the rolling stairs in this case (Figure 1). The player / participant is invited to alternate the position of performer and spectator (Reeves, 2008), enabling them to unveil, sense and discuss actual emerging body concepts. How this is actually realized is by engaging oneself physically, by putting the bodies in motion. 'Bodily-meaning-making' (van der Vlugt, 2014), or critically engaging with one's body stimulates an open 'unnatural approach' to the world resulting in creativity and emphatic social behavior (Merleau-Ponty, 1945; van der Vlugt, 2015). For example: if I train myself to listen to my bodily communication, I can try to decipher how memories, associations and emotional assumptions are coloring my perception, how these are influencing how I take in and combine information, and what my verbalised conclusion is based upon.

Play is seen in this context as a 'voluntary and intrinsic activity' (Huizinga, 1949; Caillois, 1961) that can be used as a tool to understand our perception of the world. Through play, our (incorporated) knowledge can come to be activated by listening to our body and consciously interacting with it. Then it is

possible to find a personal way of engaging with new information in a manner of which it is proven that it stimulates better understanding and beholding of information: evoking a state of being in the here-and-now, with focus and complete attention.

In order to make this possible, it is necessary to create an environment in which body awareness is evoked and the body can actively and personally engage in activities, with the environment and with others. There are different ways in which the body can be made aware. In this specific study, however, the artist set up several requirements to inform the design of the interactive technology (the rolling stairs) to stimulate 'corporal literacy'. These design requirements include:

1. The use of a haptical interface (through balance in this case): this is required to engage oneself physically, by triggering an inquiring attitude
2. To have physically challenging activities each with a distinct learning curve: this is achieved by having several interaction possibilities between the players, which require the learning of specific physical abilities. This design requirement refers to the notion of 'handicraft', and helps players develop concentration and endurance
3. The need to develop a corporal consciousness (like 'What posture do I have?') through feedback and reflection: this is given by the ability to keep in balance, to maintain synchronicity with the other player and by reaching a common purpose together
4. The possibility to enable personalised interaction with technology: RollingStairs foregrounds three different interaction possibilities, so it is up to the player to decide what functionality to trigger and what interaction modality to engage with.

RollingStairs fulfills these requirements. It requires for the players to first find their balance if they want to play. Playing requires them to listen to their body and to accommodate it to the movement of the stairs in order to trigger a certain tune, thus modifying it synergistically with the stairs to produce different sounds. The presence of another player augments the possibilities of exploring the potentialities of the interactive device but it also augments the difficulties: because now the body has to find a synchronicity also with the other player's body and not only with the stairs. This requires players to have gained some kind of confidence with the installation, to be able to shift their attention from themselves to the other body, and to concentrate on it to create new melodies and new choreographies of movements. This shifting of attention requires craftsmanship, implying the acquisition of a deep awareness of oneself and of one's body in space in relation to the stairs and to the other player. Only when this consciousness is achieved, melodies can resonate through each player's bodies. The third element is the audience watching – that is important, that is why this artwork is shown in a public place: it makes the player focus on their own body again – but it adds also an extra level of difficulty.

From Observer to Player

RollingStairs has been exposed in different venues and played with by several people. We have been analyzing in particular the occasion when the stairs have been showed at Cinedans, a dance film festival held at EYE, the film institute in Amsterdam, in February 2015. This festival lasted a couple of days during which we have been present observing people's reaction at RollingStairs and interacting with them. Many people were observed playing with the rolling stairs, although their exact amount is unknown. The observations we did were informal as we documented them by taking notes of the participants' facial expression, body language and the way of acting in particular in relation to the other people that might have been present. Our goal was to understand what triggers people to play in this specific context – that is to move from observers to players – and, in particular, whether and how the presence of an observing audience would impact on the participants' engagement with the stairs.

We observed several recurrent behaviors from the festival visitors: an audience around the installation seemed to affect people's choice to shift from observer to player. When other people, even distracted passers-by, were around RollingStairs, nobody really dared to use the installation. Those who tried it did not look comfortable when doing it in front of other people. Their expressions were often scared or tried to disguise indifference: they looked indifferent but probably felt something else and this was their way to disguise discomfort. In general, adults were not looking totally at ease when playing on RollingStairs. We noticed however that the installation was used more often when the space around it was quiet, with few people present. However, even then, kids mostly used the installation. Children played alone with the stairs, played with other children and also together with their parents who they often brought along after they (the children) had tried RollingStairs themselves. The installation was clearly a success with the children, especially when they succeeded in involving their parents in playing with it. Another phenomenon that we could clearly recognise is the non-easy accessibility of the rolling stairs. Although the stairs could never trip over, they were actually very stable and safe to stand on. Playing with them requires good physical balancing skills that not everybody, especially less young people, have. The essentially physical nature of the installation seemed to be a threshold for people to interact with.

Body as Play: 2

Looking at the way people played with RollingStairs, the notion of the body as play emerges more clearly: not everybody was able to appreciate playing in this particular scenario in which a certain physical proficiency is the way to get in contact with another player. Body as play is translated into the following three statements:

1. The body is discriminant.

Feeling the body but also controlling the body. Being controlled by the body and having the confidence to let oneself be guided by it.

Maybe these considerations can ultimately explain why younger people were more eager to play.

2. The body mirrors the space.

The observations showed that the location of the installation matters a lot when people need to decide whether they want to participate / interact or not in public. The physical setting has a strong impact on the kind of behaviour that is considered appropriate. But the location is not just physical. More than the physical environment, it is the social context that really matters. This is somehow reflected in the physical space (who are the typical visitors of a dance film festival?) but may differ also (the space was semi-public, therefore it was not possible to meet just any unwitting passers-by. It was a dance film festival whereby most people visiting it were willingly there).

3. The body sets the threshold.

Feeling that there is a correspondence between the physical and the social space determines the nature of the threshold to step into the interaction. Sturm et al. call 'social embeddedness' 'the prime motivators for (physical) activity' in public spaces as they claim that people like to take part in social activities (2013: 2). Social connectedness is another aspect: playing together makes people feel safe and more protected (Lamb, 2006). In the case of RollingStairs, it is playing with another player that gives this feeling of security by lowering social embarrassment.

However, Sturm and her colleagues do not specify when this is true, nor how. We claim instead that the recognition of a congruence between what is felt as the social context and what is experienced as the physical setting is discriminant in this sense. This might also be true of a discrepancy between the two. Erving Goffman would call this 'frame collision' (Goffman, 1959, 1966). For example, if we look at the case discussed in this paper, Cinedans is a dance film festival and we can assume that it is visited mainly by people interested in film and dance, most of whom have a physical / dance / performance background. Knowing this may make one feel less restrained in doing something like trying to hold their balance on rolling stairs and interacting with another player while doing it, because they assume that this is what is expected from them, that is one of the reasons why there are there. In this case, because of the recognition of this correspondence within a physical-social setting, the resulting threshold is very low and this encourages people to get out of their comfort zone and take part in the interaction. In a situation where the physical setting was the staff canteen of a university and the social setting was mainly consisting of colleagues (Rondeute, Calvi and Dekker, submitted), the threshold was perceived as being much higher and this had made participation in the interaction more difficult to take place.

If the threshold at Cinedans was so low, why were there so few people playing? Why were they mainly children? The reason, we believe, has to do with the vulnerability associated with this mostly bodily interaction. RollingStairs has proven a big success with children, probably because of their intimately physical nature: kids are less scared to participate in physical activities, while with adults it was different, even when they were

trying it with their own children. The expressions on their faces were often scared or tried to maintain indifference as a way to disguise discomfort. As mentioned earlier, this installation has shown its major limitation in not being so easily accessible to everybody, especially the less agile people with balancing difficulties. It was not possible to fall from the stairs and they could never collapse. Still, a facilitator was needed to tell / show people that. This is a role that the children naturally took on. So to become bodily engaged (to use the body as play), it is important that somebody demonstrates the embodied interaction otherwise it is hard for observers to start interacting, to become players because they may be afraid that they will do it wrong. This (social) embarrassment is particularly connected to bodily interaction because the body is the most vulnerable thing we have to show / play with. Being overpowered by this embarrassment shifts the visitor's focus from playing (or the possibility of doing so) to admiring the artwork. Then the artwork appears for what it is, as an artwork indeed, and its aesthetic qualities become paramount. If it cannot be used in the proper way – to play – then just watching the big, wooden, archetypical objects and listening to their sounds by slowly moving, was interesting as well.

We have started this discussion wondering if the audience has an inhibiting effect on people's intention to participate in an interactive installation in a public space. We observed that the presence of the audience had a clear effect on most adult players. We also noticed that it was mainly their children who could convince them to try and play with the installation. This fact seems to suggest that even in a situation like this one, where there is a felt congruence between physical and social settings as mentioned earlier, a 'facilitator' is needed. This person functions as a kind of 'ice breaker', in that they help lower the threshold to step into the interaction for new, mostly adult, participants to play. In the case of RollingStairs, we could observe that the children themselves in relation to their parents mostly played this role. In this way, the parents could enter into a kind of play mode (or the magic circle described by Huizinga (1949)), and seemed to forget the environment around them. Hespanhol et al. (2014) have reported a similar phenomenon when analysing social encounters around large media façades, albeit in a public space or a city square and not a somewhat socially controlled and yet openly accessible environment like this festival. A public square guarantees anonymity, but the socially controlled environment of the dance festival should ensure that many of the people around a player are possibly known. In our observations, indeed, many visitors consisted of families with children.

So, this installation shows that play does not have to be performance. In fact, it plays with this border and this is what makes the installation engaging when people start to play with it. They are forced to be drawn inward and focus on their physical body while communicating with the other person and the outside world. They become very engaged while this activity occupies them completely. The installation thus pushes the participant to be aware of this ongoing communicative triad between physical body, the other, and the world.

Conclusion

With this paper, we intended to investigate what triggers people to interact in public using their body as play and what design elements should be present in the environment (or the installation) to encourage them to do so. We identified a number of design issues to consider, like the need to feel a congruence between the physical space and the social setting; the vulnerability associated with bodily interaction especially for those who did not feel as belonging to the expected audience of dance performers (that is the many adults present at the festival); and the familiarity of the people around the player, especially for those for whom this congruence was not so evident. We refer here to the adult players, for example the parents. They might have not felt this congruence (as not having the adequate dance / performance background that was apparently expected in that specific context) and needed a facilitator to help them overcome this resulting frame collision and enter into play mode. This was particularly successful when the role of facilitator was taken over by their children.

However, our observations have highlighted further issues to be taken into consideration when designing for bodily interaction in public, whereby more research is needed. For instance: What does really encourage embodied interaction? What kinds of embodiment can be triggered? And how? Is the feedback loop something people consciously experience? What kind of invitation should they get? Can the facilitator be a sign or a text, instead of a real person? There was indeed a clear description of the installation next to RollingStairs, but this clearly was not as effective as the children encouraging their parents to play. What are the advantages of using a person, like a child as facilitator, or will a projected video also do?

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Biographies

Licia Calvi is Senior Lecturer in Interactivity at the Academy for Digital Entertainment (ADE) at the NHTV University of Applied Sciences in Breda (NL). Her research focuses on playful interactions and on digital storytelling for cultural heritage. She is very much interested in how to design interactive technology for use in public and semi-public settings, like museums, and the role performance plays in these interactions. Recent projects she has coordinated in this field include the *Becoming Vincent* project on Vincent Van Gogh, and a project on military heritage related to WWII in Brabant.

Marloeke van der Vlugt (1971) is a Dutch artist and researcher. After graduating from *Theatre Studies* at the University of Amsterdam, she studied Scenography at Goldsmith's Academy London and Choreography at the Laban Centre in London. As a scenographer and video maker she worked with a number of (inter)national directors and theatre groups. At DasArts, (Amsterdam School of the Arts), she specialised in assembling theoretical and hands-on knowledge about the relationship between technology and performance. Since then she works as a freelance concept developer for institutions like Waag Society and as an autonomous artist and director of interactive, audiovisual and performative installations. Marloeke is currently affiliated as a tutor with the HKU University of the Arts Utrecht and as a researcher with HKU Research Centre Performative Processes.

Sofie Ronduite (1992) graduated in Media and Entertainment Management at the NHTV, University of Applied Sciences in November 2015. Her thesis topic focused on interactivity in public spaces. She has always been very orientated and interested in other cultures. After completing her secondary education she took part in a year exchange programme in Arkansas, United States. During her time at NHTV, she studied in Perth for half a year at Edith Cowan University to specialise in scriptwriting and photography. Currently she is studying General Social Sciences at the University of Utrecht.