co-incidental animation

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Co-incidental animation: Framing chance occurrences of illusion of movement as animation events

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Declaration

This thesis represents partial submission for the degree of Master of Philosophy at the Royal College of Art. I confirm that the work presented here is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

During the period of registered study in which this thesis was prepared, the author has not been registered for any other academic award or qualification. The material included in this thesis has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.

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Copyright Statement

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The practice is presented on the website www.co-incidental.com

Definitions of Key terms

a (performance) event: an unrepeatable encounter 'in which all participants find themselves in the same place at the same time, partaking in a circumscribed set of activities' (Fischer-Lichte. 2014, p.18)

an event (score): 'a minimal form of performance score invented by George Brecht' (Knowles, n.d.)

animation event: an illusion of movement occurrence observed and intentionally experienced as an event

co-incidental: an incident encountered by chance available to those present to it

fixity: the materially bound state of a physical object

flicker: an intermittent obstruction causing a continuous, rapid switch between the presence and absence of a stimulus, or stimuli

illusion of movement: perception of an inexistent movement; a movement sensed due to a misperception of stimuli

image source: a term devised to indicate a physical entity that creates secondary images (e.g. a body casting a shadow)

intermedia: 'works which fall conceptually between media that are already known' (Higgins, 2001, p.52)

intermediary (stimuli) modifier: a term devised to indicate a physical entity that interferes with the conditions to impact the stimuli that emerge

production: fixing into a physical object body

stimulus (for illusory perception): momentary individual visual, haptic or aural information

Abstract

This research originates from a practice-driven urge to achieve simultaneity and immediacy in the creation and experience of animation by aiming to bring together construction, production and presentation of illusion of movement in time and place. Focusing on illusion of movement as animation, this research borrowed from the perceptual elements already employed in animation practices. However, recording a sequence – as in filmmaking – leads to temporal and physical distance between the creation and presentation of an animated work. Accomplishing the aimed simultaneity and immediacy suggested looking for ways to achieve illusory movement without producing material artefacts to yield it. In order to realise this goal, this research turned to performance studies, where ephemerality and immediacy are theorised as inherent properties of performance practice. Those insights from performance theory were developed as possibilities for animation within the research practice. Performance theorist Erika Fischer-Lichte's (2008, p.75) positioning of performance event as open-ended and artwork as fixed was taken as a starting point. On the basis of that theoretical grounding, a process to unite separate phases in animation creation is explored in tandem with incorporating event properties into animation.

The research asks the question:

How can animation be created and experienced simultaneously and immediately, as ephemeral as a performance event?

In this practice-based research, the enquiries were carried out through practical experimentation while building a framework for reference and analysis based on performance theories. As suggested by Gray and Malins (1993, p.8), this study devised its own methodology where collecting visual, auditory and written data, building physical and developing theoretical tools, as well as working with participants provided methods to inquire an animation practice of immediacy.

The research begins in animation practice, negotiating possible ways to create the illusion of movement. In order to understand how this illusion occurs in animation, the research looked at perceptual and cognitive mechanisms. The preliminary investigation of optical toys and flipbooks, rather than films, was then

extended to non-visual modes of illusory perception, and possibilities through aural and haptic illusions of movements were explored.

The study then introduced the theoretical framework to explore the immediacy of 'event-ness'. Based on Fischer-Lichte's (2014, p.18) framing of the four characteristics of performance, the framework through which to shape and analyse the research practice emerged: *mediality* (bodily co-presence), *materiality* (transience), *semioticity* (emergence of new meaning) and *aestheticity* (the experience of performance as 'event'). The considerations of liveness, co-creation, ephemerality, and fixity of the research practice thus found structure for evaluation through Fischer-Lichte's perspective (2014, pp.18-46).

Finally, as contribution to expanding animation practice, it is proposed to approach animation as an event where illusory movement is observed through instructional scores. By calibrating and analysing possibilities of animation through the framework provided by Fischer-Lichte's work, it becomes possible to amalgamate the three separate processes of animation – construction, production and presentation – into a single process, the animation event. In this event, the creation and experience of animation are simultaneous and concurrent; thus, providing an answer to the research question.

Thesis Structure

Although this research process interweaves practice, theory, animation and performance, the thesis is laid out in a conceptual progression. In Chapter 1, the three strands, perception, challenge and expansion are presented. In the critical contextual review in Chapter 2, the relevant literature and practice are presented to establish key concepts and address the gap in knowledge. The theoretical framework structured in Chapter 2 informs Chapter 3 where the research practice is presented. Knowledge is generated through both theoretical and practical inquiries in Chapters 2 and 3. Chapter 4 concludes the thesis with a summary of insights gathered from the research as well as a discussion of contributions, limitations and possible steps for future research.

Research practice is presented through visual documentation. Photographs and diagrams illustrate the work and ideas in the thesis, and video documentation is available to view on the research website which can be accessed via: www.co-incidental.com

The website is arranged into two main sections: the Research section, which is the collection of all the research practice except for the animation events, which are archived in the Animation Events section.

Throughout the thesis, relevant works are linked into the text and marked as (VIDEO) for single videos or (VIDEOS) for related video groups. Clicking these marks will direct to the website, where a bar that links to both sections is always accessible at the top.

CHAPTER 1 : RESEARCH BACKGROUND

1.1 Introduction

For a practitioner seeking immediate making and sharing experience, creating animated work can become frustrating. The creation process involves laborious efforts and long hours. It is possible to get a sense of how the work is coming along through tests while still making, but to encounter the work in its entirety requires additional processes, which further preclude experiencing or sharing the work immediately. To experience the illusion of movement instantly and spontaneously is hard to actualise through the existing practices of making animated work. Instead, alternative approaches are required in order to discover how animation can become an immediately achieved (both created and experienced) illusion.

Professor of performance studies Erika Fischer-Lichte (2008, p.17) compares the work of art to the performance event in terms of transience and fixity by stating that 'the artist, subject 1, creates a distinct, fixed, and transferable artifact that exists independently of its creator. This condition allows the beholder, subject 2, to make it the object of their perception and interpretation'. In contrast, she (2008, p.75) explains that 'performance does not consist of fixed, transferable, and material artifacts; it is fleeting, transient, and exists only in the present. It is made up of the continuous becoming and passing of the autopoietic feedback loop'. An animation work is a 'finished', 'fixed' art object, and the fixing of animation is established throughout the multi-process creation of the work. From the animator's studio to the site or platform of its reception, these phases hinder immediacy.

Animation scholar Dan Torre (2017, p. 5) structures creation process using three phases: *construction phase*, *animative state* and *presentation phase*. Building on Torre's idea, this thesis adopts these phases with a slight change in the naming as construction, production, and presentation: the construction of a sequence, the production of a body that delivers the sequence, and the presentation of the sequence in an animated state.

The construction phase is the creation of a sequence that provides the illusion of movement when played in order. Individual images (e.g. drawings, pages of a flipbook, single-frame images of a puppet manipulation) are created with incremental changes between each image captured. This phase is followed by the production phase where this previously prepared material is turned into a finished product (e.g. recording as a sequence, binding a flipbook, developing a film strip, burning onto DVD, etc). During production, an intermediary body is produced that encapsulates the work as a whole so that it can be taken to venues or platforms for presentation. During this second phase, the illusion sequence gets fixed.

How animation is understood in this research is discussed in Chapter 2; however, throughout the research, the focus is on the illusion of movement in the context of animation. Lilly Husbands and Caroline Ruddell (2019, p.7) note that 'the notion that animation is an entirely constructed form has become a central tenet of animation studies'. Erika Fischer-Lichte (2008, p.18) proposes that 'if "production" and "reception" occur at the same time and place, this renders the parameters developed for a distinct aesthetics of production, work, and reception ineffectual'. If animation could be produced without being turned into a product, it would mean that the construction would immediately produce the illusion, without having to go through separate phases. In order to avoid lexical confusion, I will refer to this as the 'creation'[1] of illusion sequence.

The presentation phase of the work is its encounter with its audience, through as many playbacks as wanted. As Fischer-Lichte (2008, p.17) notes: 'The fixed and transferable artifact, i.e. the nature of the work of art as an object, ensures that the beholder can examine it repeatedly, continuously discover new structural

[1] Therefore, what I call 'creation' in this case can be formulated as the construction of a sequence, producing illusion; that is, two phases are combined.

elements, and attribute different meanings to it'. *Co-incidental Animation* aims to develop a practice where rather than creating such a work following separate construction, production and presentation phases, the creation and experience of the animation phenomenon happen at the same time in the same place, in a single, unified encounter; immediately and only once.

1.2 Research question

The premise of the research – that is, looking to establish a method that yields an ephemeral animated illusion to be simultaneously experienced – led to the research question:

> *How can animation be created and experienced simultaneously and immediately, as ephemeral as a performance event?*

The focus on animation is narrowed down to illusion of movement, as explained in Chapter 2. Similarly, instead of considering all possible performances, 'event' (as practiced by Fluxus artist George Brecht) and performance event (as explained by Erika Fischer-Lichte) form the basis of the relationship of this research with performance.

1.3 Aims and objectives

Aim: To achieve a practical method whereby animation as an illusion of movement is simultaneously created and experienced, in the moment and place of its transient occurrence, without a recording.

In order to fulfil this aim, the inquiry is structured by further questions:

> *What is essential to the creation and perception of the illusion of movement?*
>
> *What constitutes or determines the ephemerality and immediacy of a performance event?*
>
> *How can the illusion of movement occur without being recorded and played back?*
>
> *How would a transient illusion event become an animation practice?*

Objectives:

To explore how much material production can be forgone in order to achieve the illusion of movement without recording;

To understand what makes a performance (event) open-ended, and to incorporate that insight into practice;

To establish an animation practice of illusory movement events.

1.4 Methodology

This is a practice-based research, where the methodological framework is guided primarily by practice, informed and analysed by theoretical concepts and approaches. Research begins with the following hypothesis:

> *a practice of animation with characteristics of performance event-ness would yield simultaneous and immediate the creation and experience of illusion of movement like a performance event.*

Upon identifying key concepts and gaps through the critical contextual review, the hypothesis will be tested via practice. Following an evaluation through performance theory, conclusions will be drawn.

In order to gather data, test, analyse and validate this hypothesis, guidelines for practice-based research methods proposed by Carole Gray and Julian Malins are adopted (1993; 2004). Addressing the research question is approached by a three-theme structure throughout the research: perception, challenge and expansion. Respectively, these themes address animation (through illusion of movement), performance (through event-ness), and how animation can become an event in practice. The themes structure theoretical and practical enquiries, and each theme dictates a methodological approach specific to its concerns.

The methodology is comprised of two lines of enquiry: contextual review, and research practice. The contextual review establishes the critical theoretical underpinning through surveying relevant literature and practice, and summarises the insights into referential, theoretical tools for the practical enquiry. The research practice builds onto these insights and incorporates these

tools in developing an intermedia practice that falls between animation and performance. The three strands weave throughout the thesis as:

Perception: Establishing the fundamentals of the illusion of movement is achieved through a review of cognitive psychology. With the discussion in the contextual review, this research surveys cognitive research conducted into perceptions of illusion of movement and into the conditions that yield the illusion. The findings establish an understanding of illusory movement, which provides the research with an animation concept to work with.

Challenge: The challenge in this research is to find a way to create experiences of animated phenomena without recorded fixities. The contextual review is designed as a discussion through relevant literature and practice in order to present this challenge. Performance theorist Erika Fischer-Lichte's (2014, pp.41-2) event structure provides the framework wherein theoretical tools that provided guidance for practice are developed. Through practice, the range for illusion of movement with less material creations and increased ephemerality are explored.

Expansion: The insights gained from Perception (the illusion of movement) and *Challenge* (event) are brought together in order to move towards expanding practice, towards establishing animation events. This expansion of animation into an event is established through the emergent method employed within practice. The specific methods that are employed in the emergent method are adapted from procedures outlined by Gray and Malins (1993, p. 8):

- testing and appropriating existing practices of animation;
- collection of data (observation, documentation, journals);
- iterative selection – improvement - discarding process;

• presentation of work to test participant reactions and responses through workshop performances;

• analysis of practice through Erika Fischer-Lichte's performance theories.

Figure 1 illustrates the methodological structure of this research as it is developed through contextual review and practice, across three themes:

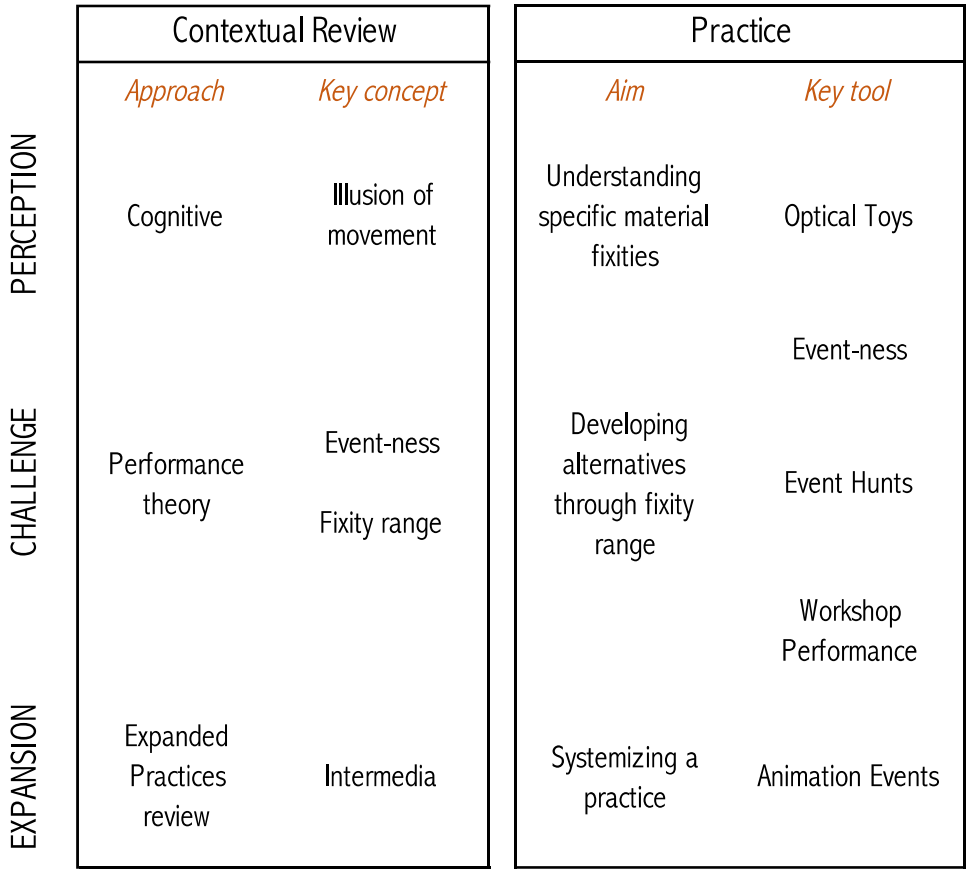

Figure 1 *Methodological structure of the research*

CHAPTER 2 : CONTEXTUAL REVIEW

2.1 Introduction

Performance studies professor Erika Fischer-Lichte (2008, p.17) explains the art object as 'a distinct, fixed, and transferable artifact [sic] that exists independently of its creator'. In contrast, Fischer-Lichte (2014, p.22) states that 'performances cannot be contained in or translated into material artifacts. They are ephemeral and transitory; they deplete themselves in a continual cycle of waning and becoming; they are acts of autopoiesis (that is, self-creation)'. This duality provides the base for how animation is challenged through this research.

Considering animated film as a fixed art object resonates with the practice-related struggle that led to *Co-incidental Animation*: that creation, production and presentation of an animated work take place at different times in different places, leading to disconnected and separate experiences for the maker and the audience. The processes that are involved in creating an animated product require the material fixing of the animation phenomenon as a product. It is these material fixities that cause the temporal and spatial separation. Preparing a sequence by shooting, recording, drawing to allow the constructed illusion of movement to be played back, require a separate production process that will turn the sequence into a 'product'.

In order to bring immediacy and simultaneity into the creation and experience of animation, it was necessary to seek alternatives to the three-phase process of animation (construction, production and presentation). Fischer-Lichte's opposition between performance event and the art object thus influences this research to propose making animation as an unfixed event similar to a performance rather than a finished product such as a film or an animation toy.

To make an animated work without fixing it to material, therefore reconsidering production, this research examines how material fixities function in animated works. Rather than focusing on the fixities themselves as film or drawings, the research starts the inquiry by understanding what is essential to the animated

phenomenon—the illusion of movement—and how to work with it as a phenomenon alone without production fixities.

2.1.1 Animation

This research acknowledges that the word 'animation' has different definitions. As also demonstrated by Lily Husbands and Caroline Ruddell (2019, pp.5-15), it is difficult to define animation as a single idea, if not impossible. Suzanne Buchan (2013, p.3) demonstrates that the word 'animation' refers to various notions: 'Is animation a genre? -A technique? - A mode of film? -An art form?'. Husbands and Ruddell (2019, p.8) agree on illusion of life and metamorphosis as the two key properties of animation: since 'all animation techniques share the capacity for plasticity and for developing life and movement', illusion of life and metamorphosis 'are two unique properties that have deeply informed the study of animation and could be considered as distinctive qualities of animation'. Illusion of life is inherent in all practices of animation, including puppetry and computer-generated 3D work, animated films to animation as augmented or virtual reality, which are not the focus of this research. Various connotations of the word 'animation' as commonly used in practice and theory can be categorised as follows:

animation (a): illusion of life, the alive-likeness of the inanimate, 'animated-ness';
animation (b): a perceptual illusion, such as the illusion of movement, through which the illusion of life emerges;
animation (c): a product, such as an animated film;
animation (d): a mode of practice or production as part of the creative disciplines.

Figure 2 presents these notions and presents a way to think about 'animation' as a word that spans across practices, concepts and practical outputs. The research focuses on illusion of movement as highlighted, and the empty box denotes where the research grounds itself and develops its findings. This chapter aims to demonstrate this gap and how the research addresses it.

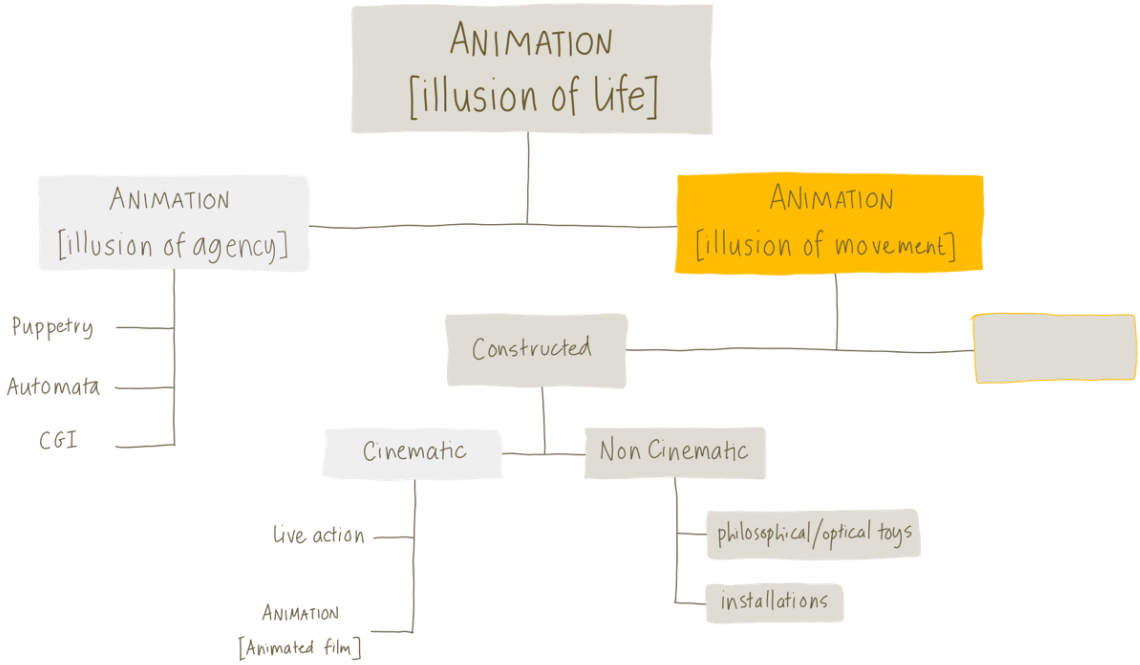

Figure 2 *Animation categorised by illusions*

Illusion of life, for example, is considered to cover all other, more specific contexts. Rather than animations such as puppetry or automata, the focus here is on illusion of movement, and even within illusion of movement, 'cinematic' animation is excluded from the scope of the research. Existing practices of illusion of movement are constructed. Most recognised or prevalent practice of animation is through filmmaking, or, cinematic illusions of movement: live action, animated film, time-lapse and any other form that is concerned with the creation of a seemingly continuous movement through a constructed filmic sequence.

Tom Gunning (2014, p.38) suggested that 'cinematic animation always involves at least a projector and usually a camera'. With an appropriation of Gunning's definition of the cinematic animation, an understanding of the non-cinematic is thus devised: the animation practices that never involve a projector (or screen), only a form of camera. Here 'camera' is used in reference to any mark making or recording that creates materials prior to the animation experience, including drawings, sound recordings or objects (as in the case of object installations). Although it is not the ground this research positions itself on, pre-filmmaking,

non-cinematic animation is where it begins examining existing animation practices and developing its own studio experiments.

Non-cinematic animation comprises practices that exist beyond a screen: toys or devices that existed prior to cinema, those that are still practised today, as well as installations that incorporate illusion of movement. Working with pre-cinematic toys, most commonly referred to as optical toys, or philosophical toys as animation historian Giannalberto Bendazzi (2017, p.12) refers to them, provide tactile opportunities to explore illusion of movement outside the screen, sharing our physical world. Toys are still employed by contemporary animation practitioners, setting examples for how alternative technologies can be used in adapting old techniques. Juan Fontanive's (2019) flipbook devices use a motorized analogue technology in automating the flipbooks. Jim Le Fevre's Phonotropes (Le Fevre, 2019) rely on the recording camera's shutter as a flicker tool for animating his physical zoetropes. As part of this research, varieties of zoetropes and praxiniscopes, as well as automata have been built and tested. However, these devices all require material fixities as mentioned above; therefore, they have been used as preliminary steps for gaining insight into illusion of movement only. Nevertheless, new ways of making flipbook without fixing were explored through practice, as discussed in Chapter 3.

2.2 Perception

Humans perceive movement, illusory or not, primarily through the visual sensory system. In *Visual Intelligence* (2000), professor of cognitive science Donald D Hoffman demonstrates how the seen world is created through our visual intelligence, and that the perception of movement is one of its mechanisms. As researchers Davidenko et al. (2017 p.2) explain how when we consider 'two frames containing a single dot shifted a short distance apart […] are presented in alternation at a slow pace […], our motion processing system establishes a correspondence between the content of the two frames, and we perceive motion'.

Perception of illusion of movement is predominantly studied by Cognitive Psychology. Gestalt Psychology as a key school of thought in visual perception 'played such an important role in the study of perception throughout the first half of the 20th century, [and it] was launched by Wertheimer's 1912 publication on "apparent movement"' (Ash 1998 cited in Steinman et al. 2000, p.2257). Psychology researchers Steinman at al. (2000, p.2257) explain apparent movement as 'perceived when no stimulus actually moves (changes position over time) in the visual field. Apparent movement is called an "illusion" because this perception of motion is not "veridical", i.e. the percept does not agree with conditions present in the physical world'. Illusion of movement[2] is the focus of animation in this research. To understand how illusion of movement is created and perceived, works of key relevant cognitive researchers have been relied upon, while seeking ways to incorporate these cognitive theoretical findings into practice.

Davidenko et al. (2017 p.1) explain that 'the human visual system is well equipped to detect subtle order in the environment; at the same time, it has an astonishing capacity to impose order where none in fact exists'. A simple way to understand this in common animation parlance is that the brain *fills in the gaps,* to connect the separate stimuli, to construct (the illusion of) a moving whole or entity, and this is the basis of animated illusion of movement. 'AM [apparent motion] is the illusion of motion produced by the sequential presentation of two or more static frames' (Davidenko et al., 2017 p.2).

With an example of a punch in an action movie Hoffman (2000, p.143) explains that although what 'the projector shows you are a bunch of stills in which the fist

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[2] This term is preferred over alternatives such as apparent movement, which as George W. Mather (2006, p.4) explains is used 'to differentiate from the real movement seen in natural images'. The reason for this selection is that the term *illusion of movement* does not limit the phenomenon to visuality, a definition that will become important by the end of the Perception section.

is closer and closer to a nose. But you refuse to see the sequence as separate, unmoving fists'. He emphasizes that, similar to how 'visual intelligence constructs the elaborate visual realities in which you live and move and interact' (2000, p.202), the motion in the film is also constructed[3]: 'The projector gives you the raw materials, but you create the living, moving cinema' (2000, p.143).

In *Animation – Process, Cognition, and Actuality* (2017), animation scholar Dan Torre examines (p.4) 'a fuller understanding of what animation is', by using this 'simplest definition of animation': 'Animation is the process of making something move or change through the application of external movement' (2017, p.5). Animated filmmaking refers to a practice of constructing a sequence that appears to move. It is also a primarily visual practice where the illusion of movement occurs visually. Yet, the animation phenomenon can be thought of as *the emergence of a coherent sequence where individual stimuli connect to one another, leading to the perception of the illusion of movement*. If this proposition were accepted, then the understanding of animation would not be limited to a visual phenomenon or experience.

Donald Hoffman (2000, p.176) explains that in addition to constructing what is seen, 'at a minimum, you also construct all that you hear, smell, taste, and feel. In short, […] all your perceptions are your constructions'. An experiment was carried out in the 1970s by two cognitive scientists, Frank Geldard and Carl Sherrick (1972), called The Cutaneous Rabbit Illusion. During the experiment, their participant who was being probed on only three spots on the back of his forearm, felt something (similar to a tiny rabbit) hopping up his arm. His mind seemed to connect the dots, *fill in the gaps* between the three stimulation points, and further make sense of this perceived movement. According to Hoffman

[3] As discussed in Chapter 1, animation is a construction, and by Hoffman's explanation, it becomes a double construction – in the making and in the perception. However, since everything we perceive is a construction of our minds, I will continue using construction in animation only in reference to creating a sequence to yield illusion of movement.

(2000, pp.180-181), the experiment was set out to test something else, and the illusion occurred unexpectedly, leading to further research. Geldard and Sherrick (1972) explain why five brief successive taps on these three spots each, consecutively on the wrist, mid forearm, and just off the crevice of the elbow, 'will not be felt at three loci only':

> They will seem to be distributed, with more or less uniform spacing, from the region of the first contactor to that of the third. There is a smooth progression of jumps up the arm as if a tiny rabbit were hopping from wrist to elbow. If the original timing is retained and the number of taps (N) at each locus is reduced, the hops get longer; if N is increased (up to a limit), the hops become shorter.

The illusion Geldard and Sherrick describe resembles how an animated film works. The consecutive pulses on the skin work similarly to the frames on a filmstrip as stimuli that merge in the perception to be perceived as fragments of a unified movement. 'Uniform spacing' and 'smooth projection' are just as important for the Cutaneous Rabbit as they are for an animated illusion of movement. The cutaneous rabbit phenomenon is an illusion of movement akin to the animation that occurs in an animated film.

Realising that animation as the illusion of movement does not have to be visual led this research to enquire in what ways other senses could be introduced to the field of animation and its experience. Not being limited to visual perception provided more possibilities to explore expanding animation practice with. This approach brought to mind a sound installation I had encountered during the 2015 Istanbul Biennial. The artist Cevdet Erek used an enclosed parking lot to install his sound piece, *A Room of Rhythms – Otopark*[4], 2015.

[4] *Otopark* means 'car park' or 'garage' in Turkish. The parking lot was emptied for the piece, with the exception of a few benches in the space as part of the work.

Figure 3 *The venue of* Otopark*, 2015. (14b.iksv.org, 2019). Courtesy of Sahir Ugur Eren*

I walked into the space without any prior knowledge or expectations. Unclear whether something was to be watched or found in the space, I wandered around expectantly. Then, I heard a ball bouncing. I looked around, yet I did not see anything other than other visitors moving. As I heard more thuds and thumps, my mind was catching cues to engage with the work, trying to make sense. As I got a hold of the sounds, my engagement with *Otopark* began to transform, and deeper I engaged, the more the work began to transform my experience of the whole space. Through the sounds, the entire parking lot became filled with an invisible yet moving presence.

Cevdet Erek is a multi-disciplinary artist who works with sound and architecture. This specific work, *Otopark*, is part of a series called *A Room of Rhythms* that he started around 2010. Erek explores sound and rhythm, juxtapositions of external and internal spaces in his practice. In *Otopark*, Erek placed separate, hidden sound sources around the space that created individual sound 'dots'. As the sound dots followed one another, a sequence began to emerge, which sounded similar to a bouncing ball in the space—one that was not there. This was an illusion of movement, a sense of animation through sound in the space, and it led this research to inquire further into the possibility of perceiving an illusion of movement, solely through sound, without visual stimulation.

This experience of sound illusion is an explained phenomenon. Psychology professor Diana Deutsch is foremost acknowledged for her work in musical illusions and their implications in music neuroscience. Her extensive research in

cognitive psychology supported that what I had experienced at the Biennial could indeed have been an auditory illusory experience. Illusions created through a perceptual difference in pitch, scales, and tonality, and the participants' handedness play an important role in Deutsch's work and analyses. Although the illusions she has worked with focus primarily on these variables, her work proves that the auditory system is rather prone to illusions. Deutsch (2010, p.162) explained that 'the sounds we perceive do not always correspond to those that are presented. When such a mismatch occurs, we are experiencing an auditory illusion'. Deutsch's work verified auditory perception of illusory movement, as one experiment demonstrated (Deutsch, 2010, p.160) that 'the segments […] appear to be joined together seamlessly so that a single, continuous tone is heard that appears to be moving around in space with its pitch motion'.

These findings supported that the illusion of movement is not only experienced visually, but also occurs through haptic and auditory stimulation, and in each system independently of others. Chapter 3 demonstrates how these insights are explored through practice. A set of criteria that also guides practical inquiry summarizes the understanding of the animation phenomenon in this research. It is proposed that for animated illusion of movement to occur, the fundamental conditions require that:

- A multitude of individual stimuli (still / singular) follow one another;
- Perceptually connected through associative sequencing;
- perceived as a singular entity in motion through time;
- results in an emergence of illusory movement.

This entire process is that of a transformation, whereby the static individual stimuli are transformed into a single whole entity in motion. As Hoffman (2000, p.5) notes, 'without exception, everything you see, you construct: color, shading, texture, motion, shape, visual objects, and entire visual scenes'. In addition to this construction of reality, in illusory movement, an inexistent movement is perceived alongside the physical stimuli. The illusion occurs due to a perceptual

transformation of these stimuli. Through the transformation, the multitude of individual static stimuli are no longer identifiable individually, instead they are perceived as a single entity in motion. This new creation, which is the outcome of the illusory perception, has an existence dependent on but different than that of the parts that it comprises.

Making haptic or aural animation is not the focus of this research, although there is sufficient reason to believe that they would be contributions to the field of animation if incorporated into practice and theory. The understanding that animation is not solely visual is in itself an expansion of how animation can be approached. Expanding the understanding of animation to include haptic and aural illusions makes considering animation as a daily, coincidental experience easier, not only because it is an expanded view of a practice, but also because it opens up more possibilities to encounter and engage with animated phenomena in the perceptual, physical daily world. The impact of including more sensorial possibilities for this research will be manifest in the aim to experience illusion of movement created and experienced without recorded constructions (i.e. ephemeral like a performed event).

2.3 Challenge

Erika Fischer-Lichte (2014, p.22) explains performance as ephemeral and transitory because 'performances cannot be contained in or translated into material artifacts [sic]'. The challenge for this research is to incorporate this ephemerality and immediacy into an animation practice, with all processes combined into a single experience. This builds on how illusion of movement was investigated in the Perception section, in order to arrive at such an animation practice, or method.

Animation as the phenomenon of illusory movement is ephemeral. However, as previously explained through the processes of animation, and particularly production—as in turning into a product—, this ephemeral phenomenon becomes locked into an object, which can be activated over and over, playing back the

same animated work every time it is presented. This object-ness dominates the entire nature of the work and surpasses any event-ness in of the phenomenon.

The notion of fixed artefact is one of the crucial points separating a performed ephemerality from the ephemeral experience of a film. The film object resides, and can be repeatedly watched, whereas the experienced occurrence disappears. As an example of performance event, Fischer-Lichte discusses Marina Abramovic's performance, *Lips of Thomas,* 1975. According to Fischer-Lichte (2008, p.12) the performance manifests how 'the artist was not producing an artifact through her actions; she was not creating a fixed transferable work of art that could exist independently of her'. The fixed nature is embedded in animation as an object of art, be it film or flipbook, and the animator as the maker is removed from the experience, time and place of the spectator. Part of the challenge of incorporating ephemerality and immediacy into illusory movement creation is to seek ways to expand animation practice beyond this material fixity. The fundamental properties of performance and what makes it unfixed provide the necessary tools to undertake this task.

2.3.1 Performance

Performance is a vast field of study and practice. Erika Fischer-Lichte's work provides the understanding of performance that this research builds on. The four characteristics of performance Fischer-Lichte discusses in *Theatre and Performance Studies* (2014) are incorporated as central elements in establishing the fundamentals of the performance concept: *mediality*, *materiality*, *semioticity* and *aestheticity*. She explains them as:

a. **Mediality**: Bodily co-presence

'Texts and artefacts' like films and paintings, 'are products that exist separately from their creator(s)' (p.19) and no matter where, when or how many times they are encountered, 'the materiality of the text, painting, or film remains unchanged' (p.19). However, a performance 'exists in the moment of bodily co-presence of 'actors' and 'spectators' (p.19), where the creator is not an actor alone but rather all participants in the moment of encounter. The mediality of

performance thus comes from the bodily co-presence of all participants in the encounter through which the performance emerges; presence at the same time in the same place.

b. Materiality: Transience

Erika Fischer-Lichte (p.18) explains the materiality of performance through transience: 'performance does not create a product. It creates itself, it is transitory and ephemeral.' She expands transience through three elements: *Spatiality* of the performance space and the space created through the performance; *Corporeality* and 'fleetingness' (p.25) of the impermanent work as created by the actor's body; and aural relationships through *Tonality*, where sound is understood as a function that creates spatiality[5] (p.35).

c. Semioticity: Emergence of meaning

The meaning that emerges over the course of a performance, too, is ephemeral and transient. 'Both bodily copresence and transience suggest that performance does not convey a stable and pre-existing meaning' (p.38), which also means that any participant will be experiencing meaning in their own way. Ficher-Lichte (p.39) suggests that 'the process of perception is also a process of creating meaning', which is highly similar to how the brain makes sense of individual stimuli and creates meaning through the perception of an illusion of movement. The moment a movement becomes perceived, although illusory, is when meaning has emerged—irrelevant of whether it is abstract or recognised as an act of something specific.

[5] Fischer-Lichte (2014) also discusses rhythm as another material, as 'a tool for organizing performance time' not in a musical sense 'but rather […] an organising principle [aiming at] regularity' (p.37). This relationship of performance is also shared by animation. Just as 'performance organises itself through rhythmic calibration' (p. 38), animated sequences are dependent on rhythmic beat as shaped by timing and spacing.

d. Aestheticity: Experiencing as event

Fischer-Lichte (p.19) explains the performance's aesthetic experience by the participants as the culmination of the previous characteristics—materiality, transience, bodily co-presence and emergence of meaning. Performances are events and are distinguished by their 'event-ness' (p.41), which will be discussed later in this chapter.

These four characteristics provide the foundation for what performance entails in this research. Building on this foundation, the research seeks ways to bring these elements into animation.

2.3.2 Animation and Performance

'Animation' and 'performance' exist within each other; however, they refer to different modes and properties of practices. It is necessary to clarify how this relationship will be approached in this context.

A staged puppet show is an example of animation in performance. Through the actions of the puppeteer the puppet would become 'animated'. Similarly, a stop-motion puppet would be frame-by-frame put in position by animators for it to 'perform' its character. In both scenarios there is 'performance' and 'animation', but referring to different contexts and functions. The immediacy of performance and the meticulous construction of animation contradict one another. This exemplifies the challenge presented in this section.

Those who work with animation and performance together take different approaches. For example, in the stage performances of The Paper Cinema (2019) pre-recorded as well as live streamed films are projected, and paper-cut puppets are projected via over-head projectors while animated. This is a puppetry animation, without illusory movement. The company refers to their practice as 'live animation' (The Paper Cinema, 2019). Another example is the theatre company 1927's *Golem* (2019), where performers perform alongside a projected animated film. There is an animation that has been created frame-by-

frame and it exists within a performance, but the animation is screened, just like any other animated film, albeit serving a purpose within a live performance. There is illusion of movement in this case, although it is not live as it has been constructed and produced beforehand.

Another artist whose work is at the crossroads of performance and animation is Vicky Smith. Her work brings another dimension to the animation-performance relationship, as she performs the making of her animations through physical interactions with the film strip, using bodily encounters such as licking, spitting, pressing her fingers into the film to mark a film strip. Smith (2015) explains her practice of 'performance of filmmaking ' (p.222) which is 'performed direct-on-film animated mark making' (p.222) as: 'I am highlighting the here and now of making and showing that is a major part of expanded cinema' (p.224). Smith performs making films, where illusion of movement is not the concern. Another example where the making process of the animator and the physical performance of the making become a convergence of performance and animation is in Birgitta Hosea's work. Hosea (2019) wears the character's head as a mask and performs live with it as an embodiment of her animated character in *Dog Betty*, 2007.

As also highlighted by Annabelle Honess Roe (2019, p.69), these examples mark the two main relationships that animation and performance have in existing approaches: 'performance in animation as well as […] animating as *a type of* performance' (italics in original). The first can be found in the performance of a character in any character animation film, and in Birgitta Hosea's work; and the latter, in the artist's process of making as a performance, as in Vicky Smith's work. Here, this research particularly asks of a possibility for another relationship between animation and performance, mutually existent, in which achieving illusion of movement is crucial. Hence, the research turns to understanding how animation and performance can respond to each other's limitations and requirements, to be worked with equally, in effect to yield illusion of movement that is performed in the moment, and irrevocably lost.

Erika Fischer-Lichte (2014, p.18) describes performance as 'any event in which all participants find themselves in the same place at the same time, partaking in a circumscribed set of activities'. She (2014, p.iix) notes that 'performance [is] constituted in the moment of encounter and interaction between actors and spectators'. Her definition extends on to include acting, scripted plays, and theatre as well, which are outside the scope of this research. However, the understanding that performance is an encounter between actors[6] of the performed event and those that witness it in the same place at the same time.

In *The Animator's Survival Kit* (2009), Richard Williams mentions the Temple of Isis in Egypt built by Rameses II around 1600BC. Williams (2009, p.12) describes charioteers riding among the 110 columns in the temple, where 'each column had a painted figure of the goddess in a progressively changed positions. To horsemen or charioteers riding past - Isis appeared to move!' and hence they would have experienced animation. He includes a drawing of hieroglyphs with figures in consecutive poses (2009, p.12). Research later revealed that this is possibly a fictive[7] reimagining of history. Nevertheless, this fabled animated imagining of the charioteers moving around and experiencing animation through the flicker between the columns offered the idea of animation occurring as part of daily activities through the movement of participants.

Bill Brand's work *Masstransiscope* (discussed in Griffin 2013, pp.285-8) provides a modern-day version of the temple ride fantasy, and has been realised twice—in 1981 and then recreated in 2013. Taking place in the New York City subway, *Masstransiscope* was created specifically for the commuters on a specific subway line. Bill Brand painted the walls of a designated section in the subway that is partitioned by several columns in front of it. Because Brand painted a 'frame' in

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[6] This research adopted its own interpretation of actors, and it will be discussed later.

[7] A strikingly similar story is previously told by Nat Falk in his 1941 book, *How to Make Animated Cartoons*.

between columns, as a train approaches this site on its course, paintings become animated. Hence, the work places animation at the heart of a daily activity. Since not every passenger will get to see it, or may not even notice it, Brand's work leads to the proposition that animation might incorporate the idea of a chance encounter.

Furthermore, some animation practices focus on making it possible for an audience (not seated in a filmic setting) to participate with an installed work (rather than a film). Works by Gregory Barsamian (2008) and researcher-practitioner Carol MacGillivray (2014) provide good examples. Their work is not limited to the flat screen, projecting a recorded film. They offer their audiences the opportunity to be immersed and surrounded by animation physically as if they were in huge, inverted stroboscopes. Through lighting, these installations of sculptures in space become sequences of object-frames in space. Thus, these works are not necessarily open ended, open to chance or change. In a transient material sense, they are fixed in their object-ness. The animation phenomenon is transient, and the audience is not bound to their seats; however, the animation objects are fixed, just as Erika Fischer-Lichte describes staging as fixed. The difference between the staging in a performance and these objects is that the performance event is not fixed in its staging, whereas the animation is fixed in these objects. It is only through those objects that the animation phenomenon comes to exist. The installations also allow for the animations to be repeated in the same way through the same setup.

Figure 4 *Olafur Eliasson's* Model for a Timeless Garden, 2011 *(n.d.). Installation view: Hayward Gallery, London, 2013. Photo credit: Marcus J Leith. © 2011 Olafur Eliasson*

A counterexample, Olafur Eliasson's Fountain series, particularly *Model for a Timeless Garden* (2011)[8], demonstrate an open-endedness and unrepeatable nature. These works achieve that by using real-time occurrences that will not be repeated. Through the use of strobe lighting, the actual movement of water, gushing upwards in mini fountains, is fragmented by the flicker of the lights. The images created by each strobe only exist at the moment they occur and then disappear forever, never to be repeated in the same way. As Fischer-Lichte (2008, p.75) explains:

> Performance does not consist of fixed, transferable, and material artifacts [sic]: it is fleeting, transient, and exists only in the present. It is made up of the continuous becoming and passing of the autopoietic feedback loop. [...] The performance is irrevocably lost once it is over: it can never be repeated in the exact same way.

[8] Please see more images of the work on Olafur Eliasson's website: https://olafureliasson.net/archive/artwork/WEK100033/model-for-a-timeless-garden

Autopoietic is derived from the Greek *auto* (self) and *poiesis* (creation). Gareth White (2013, p.23) expands on Fischer-Lichte's autopoietic feedback loop as:

> Autopoietic because it is self-generating, an emergent system that arises from itself, with only the input of raw materials rather than an exterior guiding hand; and a feedback loop because the activity of the spectators, however subtle, becomes part of the event, generating the variations in the activity of the performers and other spectators that generates more variations and so on, and produce the lightness of the theatre event.

Erika Fischer-Lichte explains an event itself as the aestheticity of performance, which is the performance experience where mediality, materiality, and semoiticity occur. According to Fischer-Lichte (2014, pp.41-2), performances are events. A summary of those five characteristic of an event is as follows:

1. A co-present encounter: In contrast to a fixed work of art, an event occurs through the interactions between actors and spectators—the autopoietic feedback loop.
2. An event is unrepeatable, unique. (Staging, on the other hand, is fixed.)
3. No individual has complete control over it.
4. It provides a specific experience where boundaries are dissolved: particularly for spectators, who are 'neither fully autonomous, nor fully determined' (p.42). Power struggles subside, oppositions collapse: either/or becomes not only/but also.
5. A transformation through the performance experience occurs when boundaries dissolve; 'a feeling of in-betweenness dominates'. Event-ness brings about liminality.

A clear contrast between events and animated films can be particularly noted in items 1 to 3. For example, an animated film is intended to be played as many times as possible. There is no audience agency in changing the course of an animated film either, because the product has already been produced. Only optical toys offer agency to the audience to some extent—changing the speed,

reversing the movement, stopping and starting as preferred. Still, the illusion is quite determined. Recording and fixing are also ways of maintaining control. Control is part of what causes lack of openness to change inherent in animated products.

Building on the understanding of the concept of an 'event', the research seeks to find a way of creating and experiencing animation that would embody these performance characteristics. The work of this thesis aimed to develop a practice where the illusion of movement constitute an event in that it would exist only in the present moment (i.e. its moment of creation would be the only moment of existence, which is the only time for it to be experienced). Therefore, it cannot be fixed on a material body or in a material form; it cannot be reproducible and cannot be played back; and it must be open to chance encounters and change.

Event-ness is taken as the focus of performance in this inquiry. The event-related practices of certain Fluxus artists, particularly those of George Brecht's, provide a practical and theoretical approach to events, and this research focuses and builds on their use of events, instructions and event scores.

2.3.3 Event

> Events are a minimal form of performance score invented by George Brecht in John Cage's historic class in Experimental Composition [...] in 1958. Many Fluxus performances take this reduced means of performance, which is often a deceptively simple instruction. Alison Knowles (n.d.)

It was a musical composition class offered by John Cage in New York between 1957-1959 brought together some of the Fluxus artists 'many of the thirty or so [of which had] met each other in the late 1950s in situations linked to experiments in musical education' (Higgins 2002, p.1). As Hannah Higgins (2002, p.2) explains, 'the most durable innovation to emerge from that classroom was George Brecht's Event score, a performance technique that has been used extensively by virtually every Fluxus artist with varying degrees of success'. She

(2002, p.2) explains that 'Event' is where 'everyday actions are framed as minimalistic performances or, occasionally, as imaginary and impossible experiments with everyday situations'.

Artists using event scores had their own interpretations of it. As Hannah Higgins (1998, p.32) describes, 'the event format is highly flexible—as its various manifestations by different artists clearly suggest'. Regarding Brecht's events, Julia Robinson (2009, p.105) writes that, although they were 'known in the Fluxus repertoire, he did not initially define them exclusively as performance scores. They started out more as mobile conceptual propositions brought into the realm of art to focus on the relationship between subject and object'. Event in this research functions as a structure and practical tool; it is adopted as a specific kind of performance, embodying its qualities of immediacy, irreproducibility and openness to change.

The event occurs only in the moment it is created (performed) and lasts as long as it needs to; as long as the performer/participant chooses it to last. Events are shared through event scores, which are instructions to a participant who performs the score. Originating from music, the score thrives on interpretation (Doris, 1998, p. 124):

> This non-obstructive interpenetration, or rather, interaction, is a principal function of Fluxus event scores [...] It is precisely the engagement of a participant in the interpretation and realisation of a score which enables the work—and the participant—to come to presence. There can be no one correct interpretation, only provisional examples of realisation.

Just as there are different interpretations of each event, different artists employed the event score as a practice in their own ways, with unique styles as well. George Brecht's event scores most closely relate to this research and are taken as the main reference point in practice for developing scores. To illustrate the difference, it is possible to understand Fluxus events in the following three categories:

1. Events framing/turning regular daily activities into performances: Alison Knowles' original 1962 work *Make a Salad* (Walker, 2019), (Morais, 2019) – where a huge salad is made with participants – or 1969 work *Identical Lunch* (Kennedy, 2019) – where she makes the same tuna sandwich every time she performs the event –, are the best examples in this regard. Both works stemmed from her daily activities, and through being framed as events with instructions, have been performed over the years in many different places with various participants.

2. Fantasy events, which are more conceptual and poetic than physically exercisable: Yoko Ono's book *Grapefruit* (2000), first published in 1964 as an artist's book, is a book of poetry with musings on instructions to imagine events. The score for *Tunafish Sandwich Piece*, 1964 (Ono, 2000), reads:

> TUNAFISH SANDWICH PIECE
>
> Imagine one thousand suns in the
> sky at the same time.
> Let them shine for one hour.
> Then, let them gradually melt
> into the sky.
> Make one tunafish sandwich and eat.
>
> 1964 spring

Anna Dezeuze (2002, p.88) comments on Ono's *Earth Piece* (1963)[9], which resonates with the others in Ono's collection of event scores in *Grapefruit* (2000):

[9] This score reads: "EARTH PIECE / Listen to the sound of the earth turning. / 1963 spring"

'with this shift to perceptual activities, the 'event' score becomes as much an invitation to find an 'event' as to perform it'.

3. Conceptually framing simple situations in daily, casual settings worded with simple, minimalist instructions that are meant to be physically exercised or performed: George Brecht's *Keyhole* event[10] provides the most relevant example of this category. Written in handwriting, the score reads:

KEYHOLE

through either side

one event

GB [signed]

In this event, the keyhole seems to be proposed as a physical frame—one that sets the boundaries of a visual periphery, of a 'stage' of possibilities—, while the *Keyhole* as the event itself serves as a conceptual frame, 'framing' whatever one watches through that keyhole will be an event performed. It is an example of how important framing and intention are to the experience as well as the communication of events. Gascia Ouzounian (2011, p.199) explains Brecht's distinctive event scores style as 'brief, elemental texts that typically took the form of lists or instructions. Many comprised only a few terms or phrases'. This style allows for more ways to experience a potential event than had he expressed more in a score.

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[10] Please see an image of the work on: https://www.moma.org/collection/works/128033

In August 1970, Brecht (Brecht et al., 2005 p.236) wrote that 'events have always been a mode of experimenting, I only found a form (for myself) of putting them on paper (for others too)'. Julia Robinson (2009, p.105) describes Brecht's Event scores as:

> Cues to the spectators suggesting ways to engage with the idea Brecht set forth, if not to complete it. They were indeterminate propositions: realizable equally as an object, a performance, or even a thought. Simply to read an event score and reflect upon it without acting already constitutes an adequate realization.

2.3.4 Chance

Also present in the *Keyhole* event, the element of chance and embedding it into the work has been part of Fluxus event practices. Before Fluxus, chance has been an element incorporated in art practices actively in various ways especially since early modernism. Surrealists used is a technique that Marcel Duchamp pioneered, allowing chance to interfere with his works. John Cage took Duchamp's approach to a new realm of practice by framing chance as the core of a work.

History professor Margaret Iversen (2010, p.16)[11] distinguishes between 'chance at the moment of composition [and] reception'. Performance art is connected with chance too, but this is chance at reception—where participants take the lead in deciding how the work goes. The kind of chance involvement in this research is related to composition. It is about being open to change, allowing things to happen as they exist rather than constructing them.

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[11] Iversen gives the example of Yoko Ono's *Cut Piece,* where Ono sits waiting to be interfered with by the participants, who are welcomed to cut however much they wanted off her clothing. While Ono's work involves elements of danger and risk, it is an example of one way in which performances can incorporate chance and participant interaction.

2.4 Expansion

2.4.1 An Intermedia Expansion

In his text *Intermedia* (2001), Dick Higgins discusses the importance of intermedia approaches to challenge conventional boundaries between art forms. One of the first and foremost Fluxus artists, Higgins (2001, p. 49) states that 'separation into rigid categories is absolutely irrelevant' to a society that has now grown out of the Renaissance categorisations of paint only on canvas and not as part of a sculpture. He emphasises the eminence of works that 'fall between media', and compares Duchamp's works as still fascinating and challenging, while Picasso's art as part of a static taste of the establishment. For Higgins (2001, p.49), this is due to the fact that 'Duchamp pieces are truly between media, between sculpture and something else, while a Picasso is readily classifiable as a painted ornament'.

Dick Higgins (2001, p.52) explained the between-media state as 'works which fall conceptually between media that are already known'. In his writings, Higgins (2007, p.19) clarifies the difference between intermedia and mixed media: opera is an exemplary mixed medium, because the media contained within an opera can be differentiated, such as the music, the mise-en-scene and the text; however, 'in an intermedium, […] there is a conceptual fusion'. Visual poetries are also intermedia according to Higgins (2007, p.19), because 'they lie between literature and visual art, and there is a fusion between these so that we cannot deal with just one of their origins but must deal with the work as both visual and literary art'.

Similar to the removal of boundaries through the transformative effect during an event that Erika Fischer-Lichte (2014, p.42) describes, an intermedium also no longer contains the boundaries of 'either/or' but becomes a state of 'and/also'. Dick Higgins's *Intermedia Chart* (1995) reflects how he viewed Fluxus as an intermedium in relation to other media, disciplines, approaches and art forms. He also noted that the chart was not fixed but was, rather, in flux.

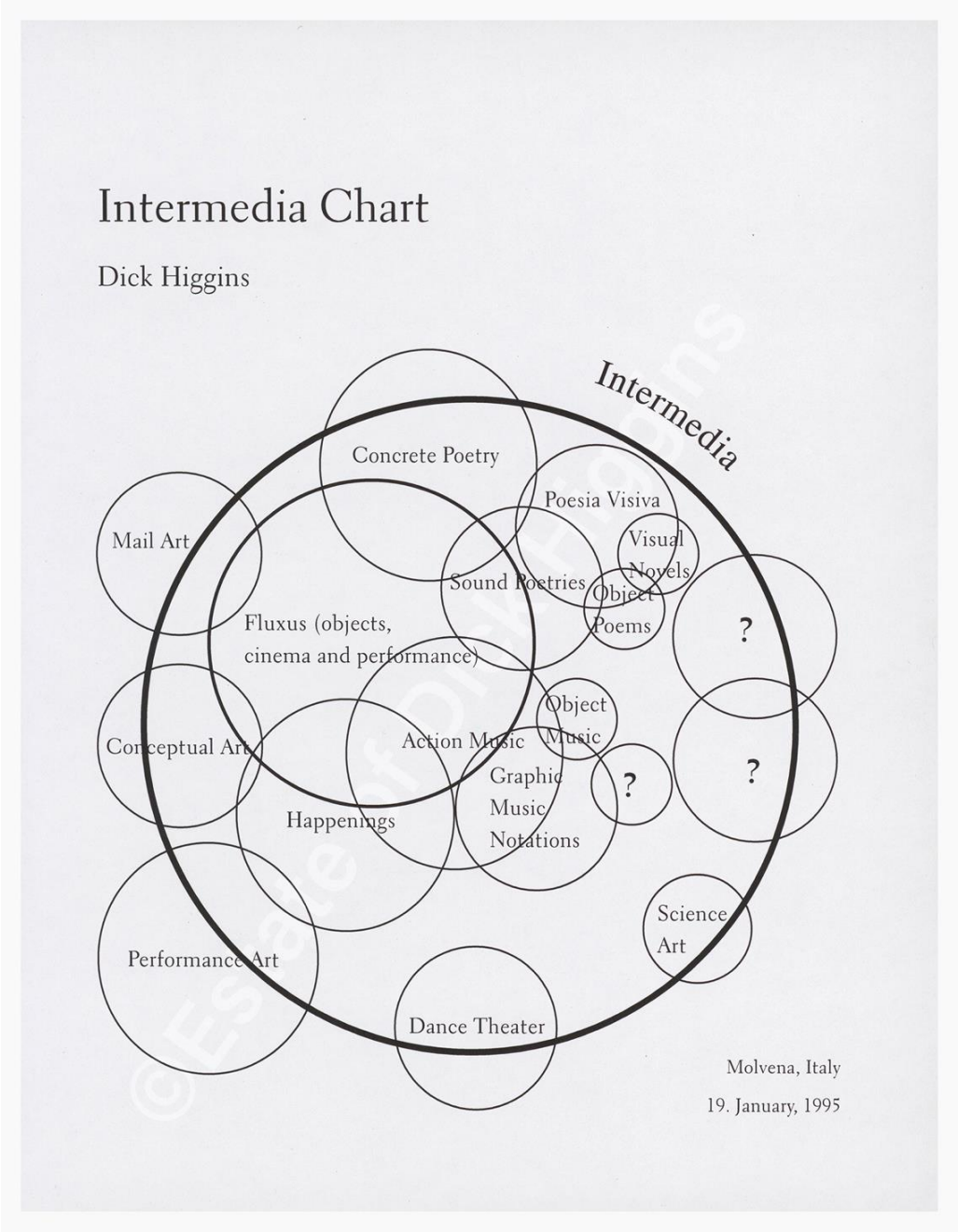

Figure 5 Intermedia Chart*, 1995 by Dick Higgins. (Harren, 2015). Courtesy of McCormick Library of Special Collections and University Archives, Northwestern University Libraries. ©Estate of Dick Higgins*

Rosalind Krauss views intermedia as 'the codeword for a veritable international plague of multimedia installation art, itself a symptom of global capitalism' (cited in Harren, 2015). Her critique, despite its oversight of the historical, conceptual and artistic importance of practices such as Fluxus, is relatable. Even Higgins

(2007, pp90-91) discusses how many non-Fluxus works were produced and exhibited as Fluxus, including expensive art objects—the commodification of art being contradictory to Fluxus. In his use of 'intermedia', Higgins was merely naming what he observed to be taking place around him at the time, and that 'intermedia sought to describe an alternative logic of artistic production in a shift away from modernist thinking without capitulating to a non-paradigm of 'anything goes' (cited in Harren, 2015).

2.4.2 Expanded Practices

Rosalind Krauss's *Sculpture in the Expanded Field* (1979) is an important benchmark for establishing an understanding of expanded practice by having used 'expanded' in reference to artistic practice. In this article, Krauss examines the connection between sculpture and monument and explores the idea that it was modernism that created strict boundaries for what monument or sculpture should be. Regarding sculpture practice in the 1960s, Krauss states that 'it would probably be more accurate to say of the work one found in the early sixties that sculpture had entered a categorical no-man's-land' (1979, p.36). This state of 'suspended-ness' of sculpture Krauss attributes to the modernist separation of mediums is not limited to sculpture.

Krauss's (1979, pp.42-43) argument helps deepen the understanding, highlighting the inherited language of what expanded animation is and might be: 'Thus the field provides both for an expanded but finite set of related positions for a given artist to occupy and explore, and for an organisation of work that is not dictated by the conditions of a particular medium'. When an art field is viewed from the perspective of expanded practice, the work no longer is 'dictated by the conditions of a medium', and the artist now has an 'expanded but finite set of related positions […] to occupy and explore' (Krauss 1979, p.42-43). Intermedia is an expansion of practice into such no-man's land.

Vicky Smith and Nicky Hamlyn (2018) position expanded animation as being akin to an intermedia practice. Expanded animation encompasses a range of practices where animation might be combined 'with installation and multi-screen

live “making”, sound-generating visuals’, or ‘the work of the artist who combine animation techniques with performance, using both the body and/or multi-projector set-ups’ (Smith and Hamlyn, 2018, p.2). These animations are also usually exhibited in art venues of various sorts, as installations, which is part of their expansion beyond the cinematic animation.

According to Smith and Hamlyn’s statement, this research can be viewed as part of ‘expanded animation’. However, it must be noted that this research has a specific approach to the relationship of animation and performance in an intermediary manner as explained by Dick Higgins. Some examples were mentioned earlier in this section where animation and performance are both present in a work, to some extent. However, these works tend to be dominantly either performance or animation. For example, 1927’s *Golem* (2019) is a performance that has a projected animated character. The work in its entirety is not an animation (as an illusory movement) —it is definitely a performance; therefore, its animation-performance relationship would be an example of mixed media. In the example of Vicky Smith, her performing the making process is distinctly a performance, and the screened filmic outcome is a filmic product.

This research uses the fundamentals of intermedia as defined by Higgins to establish its proposed expansion to animation practice. The aim is to develop an intermedia practice, where animation and performance are worked together to yield a new practice that is neither of these elements alone but rather both at the same time.

2.5 Conclusion

This research approaches animation as illusion of movement; the phenomenon that occurs through the formation of a sequence of individual stimuli in a coherent consecutive order, where the emergence of illusory movement leads to a transformation of the stimuli. The current existing practices of animation as illusion of movement are fixed to varying degrees and require processes of

construction, production and presentation that separate its creation from its experience. At the end of the production, an animated work is created that exists separately from its animator, and meets the audiences at other times in other places, via playbacks of constructs previously set up. The separate experiences of the animator and the audience led this research to examine ways of bringing them together. To do that, the processes through which animated work became a product had to be reconsidered because the existing structures become 'ineffectual', as Fischer-Lichte points out (see Introduction of this chapter); as existing practices of recording material contradict the ephemerality and immediacy sought. It is performance studies that work with the ephemeral and immediate practice of performance, which could not be fixed as a product, and thus provide tools with which to approach this problem. Performance theorist Erika Fischer Lichte's work on establishing performance concepts theoretically underpin this research.

This concern for immediacy and ephemerality calls for a reconsideration of the material fixities of animation. As long as animated work is fixed as a product, the separation becomes inevitable. In that regard, adopting event-ness from performance presents an alternative possibility. Fischer-Lichte's event-ness is incorporated in reference to immediacy, irreproducibility, openness to change, and presence to the occurrence as it emerges. Providing the research with examples of an event in practice, Fluxus artist George Brecht's event scores and style of instructions in particular are taken as references.

Creating illusion of movement that is irreproducible, unfixed and only experienced in its moment and place of existence as an event involves working with animation and performance in a way that is different than existing practices. In that regard, the research seeks to develop a practice that is intermedia following Dick Higgins' explanation—where the developed practice falls between existing mediums of performance and animation.

Returning to the empty box in the diagram presented at the beginning of this chapter, it is now possible to propose *event* in this context as an alternative

practice to filmmaking, as illustrated in Figure 6. This proposition of animation as an event will be extended in Chapter 3, where the discussion laid out in this chapter will be examined through practice.

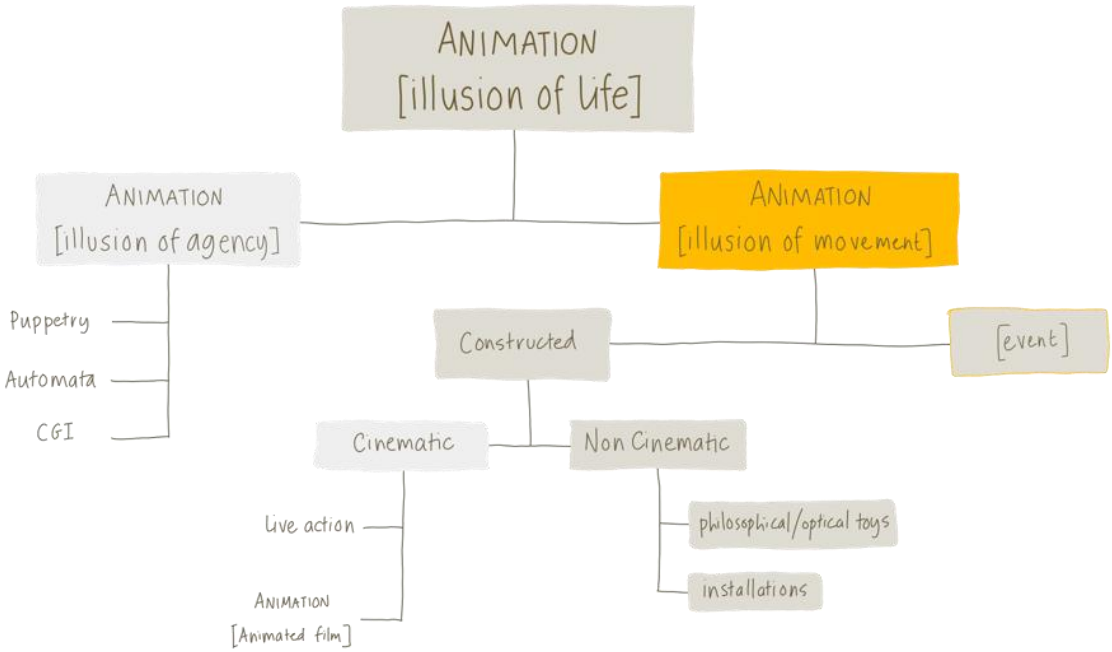

Figure 6 *Animation by illusions diagram depicting this position of this research with [event]*

CHAPTER 3 : RESEARCH PRACTICE

3.1 Introduction

Although practical and theoretical research were carried out together throughout the research process, the thesis presents these two data generation methods in Chapters 2 and 3. This chapter demonstrates explorations and findings carried out through my own practice. In particular, two concepts that emerged from the review discussed in Chapter 2 provided my practice with the relevant tools: 1) fundamental requirements and conditions with which to explore the illusion of movement, and 2) 'event-ness' as explained by Erika Fischer-Lichte.

As stated in Chapter 1 (see p.14), the aim of this research is to simultaneously create and experience animation as an illusion of movement, in the moment and place of its transient occurrence, without a recording to play it back. In order to achieve that, the concepts of illusion of movement and event-ness were brought into practice. This research practice employs the methodological framework depicted in

Figure 7. This diagram is the methodological framework that particularly applies to the practice of this research. The research objectives (see p.15) provide practical tasks to be explored through the practice. As this chapter will demonstrate, the practice is organized in this structure:

1. Testing: Exploring how much material production can be avoided to achieve the illusion of movement without recording;
2. Preliminary Event Hunts: looking to find illusion of movement in daily life occurring randomly, accidentally, or by chance;
3. Collecting Events and Creating Scores: creating a system for illusion of movement observations to build an animation event structure;
4. Workshop Performance: Sharing and establishing communication of the illusory movement experience with others;
5. Animation Events: distilling all findings and establishing animation event as a practice.

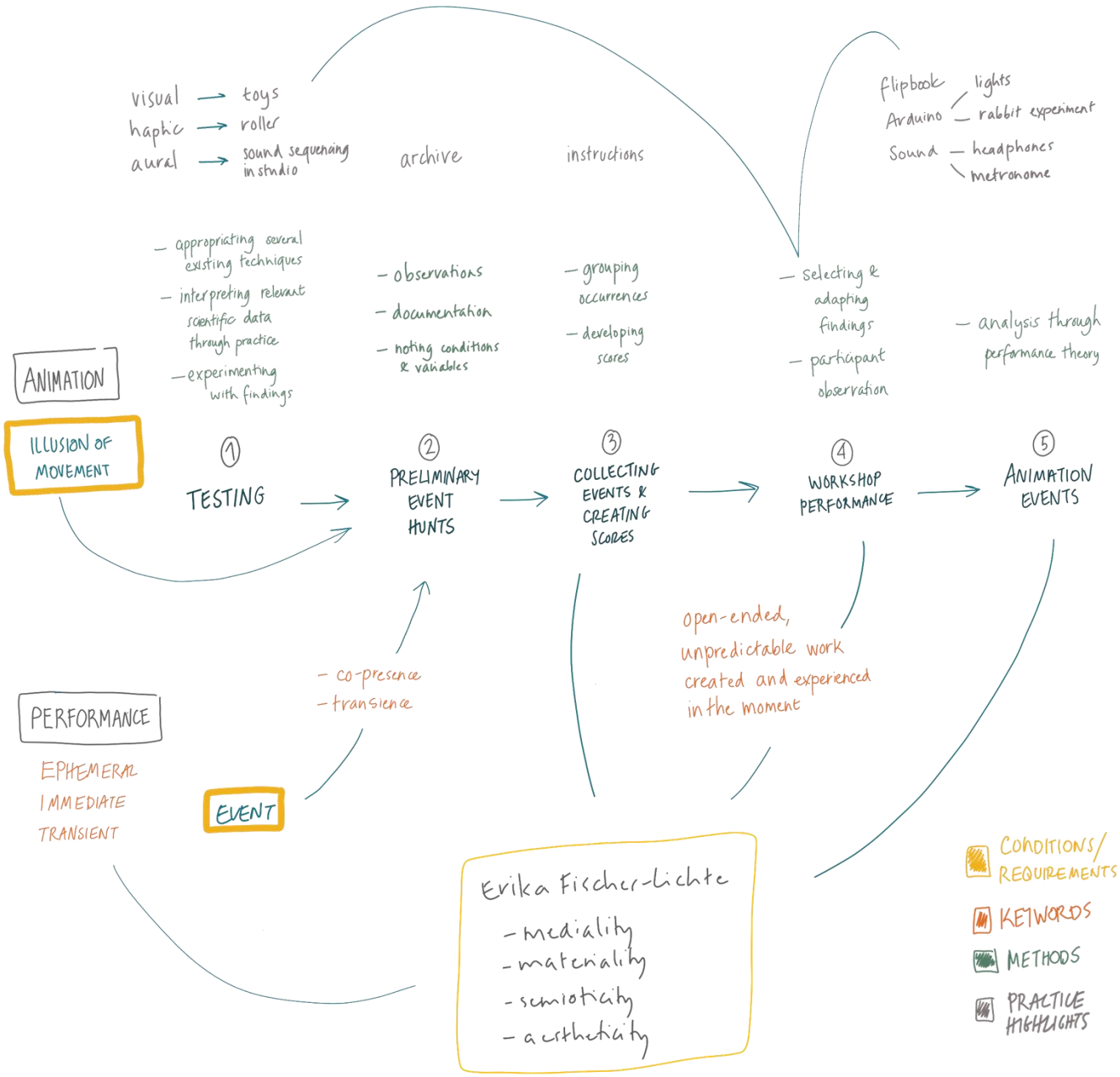

Figure 7 *Overall methodological framework for practice*

The methods and practical outputs can also be understood via the effect of the three-themed conceptual organisation of the research: 1) creating the illusion of movement (perception), 2) introducing event-ness into an illusion of movement and testing for possibilities without materially fixing the animation (challenge), and 3) moving the work towards a systematic research practice structure (expansion). Figure 8 shows how different methods were applied in accordance with each theme:

<table>
<tr><th>Theme</th><th>Aim</th><th>Method</th><th colspan="2">Practice Outputs</th></tr>
<tr><td rowspan="2">Perception</td><td rowspan="2">understand how illusion of mvt works</td><td rowspan="2">appropriate existing toys;
test with haptic and aural illusions</td><td colspan="2">Roller; flicker specs; flipbooks</td></tr>
<tr><td colspan="2">unbound flipbook; sound studio experiments; employing Arduino circuits for lights and haptic illusions</td></tr>
<tr><td rowspan="2">Challenge</td><td rowspan="2">introduce event-ness into illusion of mvt</td><td rowspan="2">incorporate un-fixity strategies;
observing and collecting events;
test communicability of findings through Workshop Performance</td><td rowspan="2">preliminary event hunts; archive of observed occurrences</td><td>findings refined for Workshop Performances</td></tr>
<tr><td>score instructions</td></tr>
<tr><td>Expansion</td><td>create illusory mvt events</td><td>systemize event observations and collection;
develop score system</td><td colspan="2">Animation Events</td></tr>
</table>

Figure 8 *Practice outputs in reference to themes and aims*

3.2 Illusion of movement

3.2.1 Testing: Toys

The inquiries in this section look at illusion of movement through toys I built as interpretations of existing optical toys. Through practice, the aim was to first understand the fixities in their materiality, and then challenge these fixities by developing toys or tools with fewer fixities that still achieve the illusion. Rather than completely liberating toys from fixities, the purpose of these toys was to provide insight on where the fixity occurs and what its function is.

3.2.1.1 The Roller

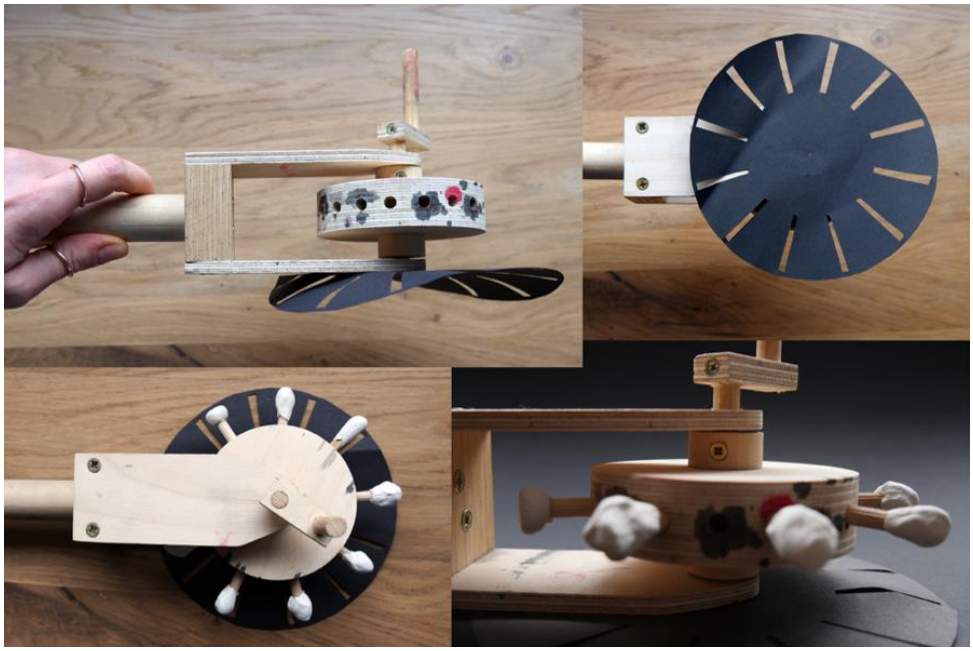

Figure 9 *The Roller as phenakistoscope*

I built the Roller[12] as an appropriation of the phenakistoscope. The idea originally was to use the Roller to create flicker – intermittent obstructions to what is seen – in daily life. When in action, though, the Roller is not fast or enough, the flicker is not sufficient. As a result, the toy does not create illusion when looked through. This idea of a mobile flicker tool led me to create another toy, and the Roller was transformed into a haptic toy during a later test. This is discussed further in the next section regarding haptic experiments.

3.2.1.2 Flicker Specs

While playing with and looking through a dismantled aperture one day, when I opened and shut it repeatedly, it created a flicker. This led to creating a device that could be carried around and used to create flicker anywhere anytime. It resembled a reverse strobe light effect—it blocked the existing light

[12] A peephole was cut into the panel attached to the non-rolling surface of the Roller. The Roller had bits that were inserted into slots on its rolling wheel, and these bits were intended to block sight momentarily as they passed by the peep hole, thus creating flicker and yielding illusion.

intermittently instead of flashing intermittent lights. However, in both the aperture and the Flicker Specs (VIDEO), the flicker was enough to distort my visual experience but not to create a sense of illusory movement. This was because the movement my mind created through the flicker was the same as the movement actually happening. This led to the understanding that in order for illusion of movement to be experienced through flicker, intermittent obstruction of vision is not enough; **the movement observed through the flicker needs to be different than the original movement.**

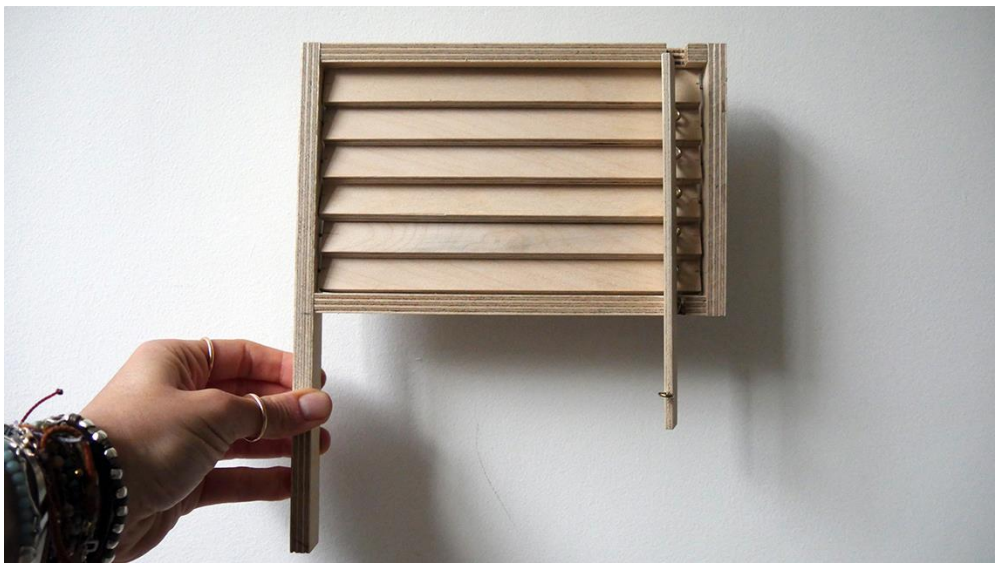

Figure 10 *Flicker specs*

3.2.1.3 Unbound Flipbook

Flipbooks are mobile, simple, accessible toys, and easy to use. They are fixed, though, in two ways: drawn/printed images create a material fixity, and then binding them into a book creates another, which also undermines any chance of change. While considering altering fixities of animation devices, flipbook presented an opportunity to alter fixity at least to a degree. Creating an unbound flipbook became an idea. It would still be fixed in its images, but the order could be changed as desired, therefore its fixity would be lessened to a degree.

In their article, Steinman et al. (Steinman, Pizlo and Pizlo, 2000) discuss two illusory movements, and differentiate the φ (phi) phenomenon that Max

Wertheimer discovered from the ß (beta) movement. The latter is how illusion of movement is commonly understood, and their explanation (2000, p.2263) provides a ground for what happens in flipbooks in general:

> ß is always described as an apparent movement of a figure (object), whose physical properties (shape, size, color [sic]) are identical to the properties of the objectively stationary targets. If the targets generating the apparent movement are different from one another, changes of some or all of these properties are always observed.

Robert Breer used flipbooks a lot, and particularly played with the form. Breer's approach to flipbook as an object with potential beyond the physical structure of the book format has inspired my practice. Along with his murals, Breer's flipbooks[13], his unique acknowledgement and incorporation of change in work provided an example for the ones I designed, and call Unbound Flipbooks.

Breer's cards are fixed, but his work offers alternative approaches to how flipbooks can be materialized. The intention with the Unbound Flipbook tests was to use cards and add the element of unfixity.

For these unbound flipbooks, I made a series of ink drawings on paper (14 cm by 7,5 cm) as shown in Figure 11. This size allowed for flipping on either ends, as well as across the sides. This was important because the images were not created in any order, and while a part of a card might have a lot of marks, another part might be blank.

[13] Please see Figure 8.6 in Edwin Carels's (2019) chapter on flipbook in Breer's work in *Global Animation Theory*: https://www.bloomsburycollections.com/book/global-animation-theory-international-perspectives-at-animafest-zagreb/ch8-short-circuits

Figure 11 *Unbound flipbook sample cards*

The cards can be turned around, shuffled in any order, taken out, put back in the deck—there is no predetermined order or sequence, and no set deck at any point. A deck can be created in any moment (VIDEOS).

When one of those decks (in a temporary sequence of cards) is flipped, however, the result is hardly a smooth illusory movement. The flipping of the cards gives a flashing feeling, rather than a unified movement. The reason that illusion of movement does not come through is that these cards have little in common to create a sequence. With vague similarity, and big difference among stimuli, a sense of randomness arises, which hinders sensing an illusion of a movement. For a movement to occur, stimuli in a sequence need to have a sense of continuity. This led to understanding that the to achieve illusion of movement, **individual stimuli correlating to one another should form unity as a sequence.**

Further unbound flipbook explorations (Figure 12) followed with controlled variables: same shape/different colours; same shape/same colour/different positions on paper; same image, slight variations dependent on hand pressure. Visually, flipping these decks is not particularly inspiring; however, the outcomes (VIDEO) of varied tests support the finding from the random ink drawing series – namely, that continuity helps detect a sequence.

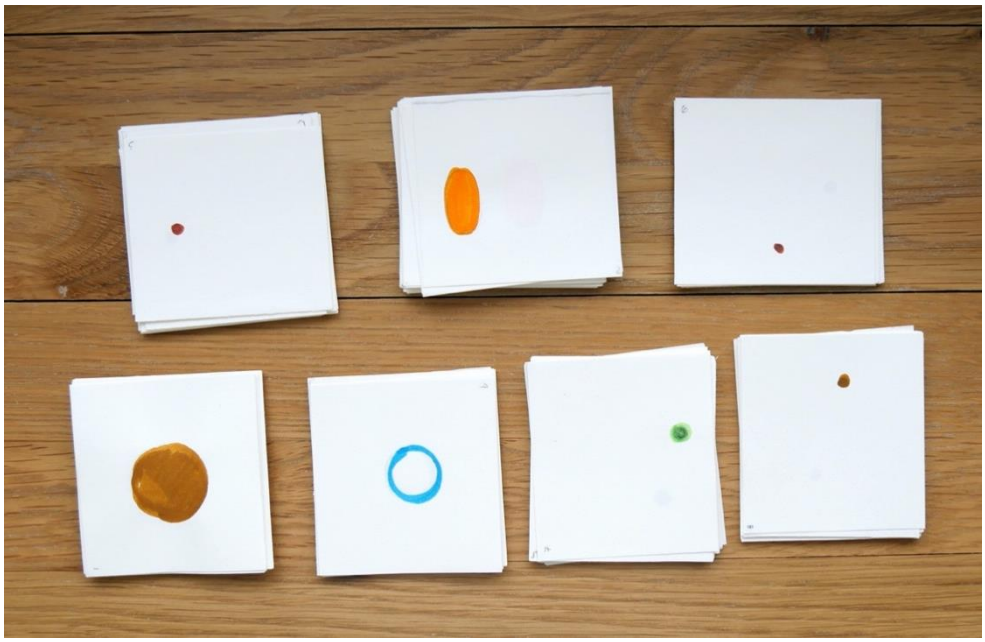

Figure 12 *Controlled variable tests with unbound flipbooks*

In summary, outcomes of toy tests provided crucial insights about illusion of movement. In order to detect illusion of movement, a change in the original movement needs to be observed through the flicker; a sequence should emerge; and the stimuli need to correlate to create a sequence.

3.2.2 Experimenting: Non-Visual

Illusion of movement experienced through aural and haptic stimuli as alternatives to visual was covered in Chapter 2. The fact that vision is not the only way to experience illusion of movement is an important finding supporting the aims of expanding on the animation practice and develop it as an event-like experience. Especially given that if animation events are to be found in daily life, more sensorial possibilities offer more opportunities to experience such occurrences.

This section shows the experiments and tests carried out to engage with aural and haptic illusory movement through practice.

3.2.2.1 Sound Experiments

Cevdet Erek's sound installation *Otopark* was presented in Chapter 2 (Otopark). This installation caused the experience of an unexpected and invisible bouncing ball sensed through sound. These sounds causing the illusion were singular, momentary, and non-musical, sounding like flat thuds when considered individually. Heard one after another, they came into unison, forming a sequence. It seemed, or rather sounded, like animation, although this is not an experience immediately recognized as such. Professor Diana Deutsch (2010, p.160) explains auditory illusions as:

> Our hearing mechanism has evolved an ingenious mechanism for minimizing problems caused by echoes in the environment. Instead of correctly perceiving a set of overlapping sounds, each coming from a different location in space, we obtain the illusion of a single sound that appears to be coming from its original source.

In order to test that my experience at the installation was not a random sensorial error[14] but instead an achievable auditory illusion, I ran a series of experiments in the sound studio at Royal College of Art. The main questions that guided the sessions were:

- How does sound yield illusory movement?
- How can auditory illusion be created?
- Can animation be understood as an aural illusion?

[14] Sometime later, I had the chance of meeting the artist, Cevdet Erek. Asking him about the animation in the work, it became clear that the aim of his work was not to create the illusion I sensed. Thus, it could have been a sensorial error on my part.

Figure 13 *A depiction of the Sound Studio at RCA: numbered boxes shows the positions of speakers, cross indicates location of a potential listener*

These experiments are simplified appropriations of Cevdet Erek's sound piece. The aim was to create a sequence through sound that would yield an illusory movement. The practical and the theoretical inquiries through cognitive perception of auditory illusion were carried out in tandem: Diana Deutsch's work provided the understanding on auditory illusions in depth, without specifics on how to yield movement; and creating the movement was explored through practice-based experimentation. The insights (see p.54) gained from toy tests provided a starting point:

> a change in the original movement must be observed through the flicker;
>
> a sequence must emerge;
>
> and the stimuli must correlate to create a sequence.

Since the movement was to be specifically constructed, there were no concerns of any original movement. There are five speakers in the sound studio, which means five points of sound direction that could be sequenced in numerous ways over a timeline.

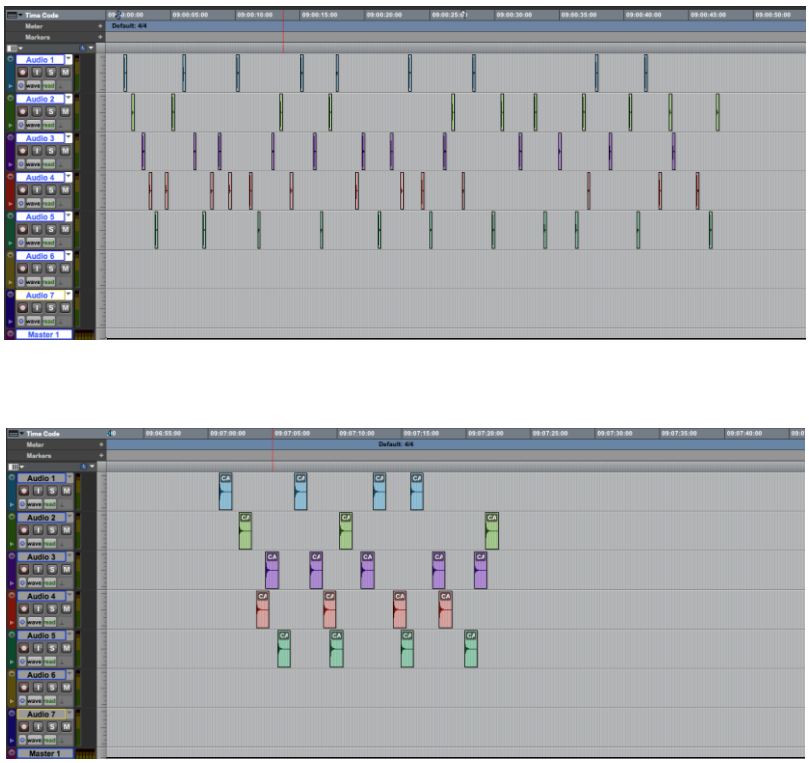

Figure 14 *Screenshots from ProTools: 'sound dots' on the timeline. Each different coloured block belongs to one of the five speakers; #1-5 from top to bottom*

Figure 14 shows screenshot from the software, ProTools, I used to create a sound sequence by placing various thud[15] sound dots on the timeline. Following the 24 frames per second rate for filmmaking, in the first attempt 24 sound dots[16] were put into one second. The result of 24 thuds coming from five directions in one second was chaotic, crowded, and simply left no space to process anything. It became obvious that mental space is necessary for the mind

[15] I initially picked three sounds for variety: a thud, a clank and a chime. First, a few exercises were made with each sound to decide which sound was the easiest to work with. The thud proved to be the most neutral, providing the least direct association with an object, context, or material (whereas the clank resembled a cow bell), and the most versatile and responsive to quick successions (whereas chime was not).

[16] Because the individual sound stimuli are not frames or images, they are referred to as sound dots in this research.

to make sense of stimuli, fill in the gaps, and perceive an illusion. The interesting point is that in visual processing, 24 stimuli per second works perfectly. To create illusion with sound required a different rate.

On the other hand, spacing out the dots made a huge difference, and along with occasional illusory movement, new challenges arose. Placing dots equidistantly apart caused a rhythmic and monotonous pattern. Whenever a pattern with a regular rhythm emerged, the whole sequence fell flat. It seemed that the pattern with regular intervals drew the attention to each regular beat and that made the individual stimuli more noticeable, breaking the sequence. This led to the insight: **As much as a sequence is sought, rhythmic patterns must be avoided.**

This difference in rhythm also proved contrary to the practice in visual animation where a regular pattern is preferred. Skipping a beat, or frame is noticeable and disturbing, whereas tests with varied spacing, beats, timing, gaps between sound dots showed that this is how illusory movement through sound actually emerged. Although initially a regular figure for aural rate was sought, like its visual counterpart of 24, it proved that irregularity helped with the illusion. Disrupting a predictable pattern yielded the illusion in every attempt. Nevertheless, the same sound dot was used as stimuli in every sequence, which helps to create correlation among stimuli within the sequence.

In addition to the insights mentioned above, through trial and error, and after numerous experiments, these observations were drawn:

- The lags between stimuli cue for distance - once the space and motion are created, the signals that take longer to be heard do not sound off beat and break the motion, but rather create the illusion to have gone a longer distance in the space and enhance the sense of depth.
- Creation of Space: the illusory movement of the dots around the room emerging through sound from the speakers creates a space.

- Stimuli Layover: each stimulus carries a part of the movement onto the next, taking the movement further. This is how coherent sequences form.

'Animation' in these experiments emerges when a sequence becomes identifiable, which leads to feeling that something is moving in the space. Conventionally this occurs visually; however, with an installation set up, it is also possible to experience this phenomenon auditorily, as these experiments, in addition to Cevdet Erek's work (see Otopark), demonstrate. In the case of auditory illusion of movement, different than its visual counterpart, a three-dimensional path starts building up, and creates its own perceived space by illusorily exceeding the borders of the physical room it takes place in.

Erika Fischer-Lichte (2014, p.36) noted that 'the materiality of performance, manifest above all in the transience of sound'. The possibility of sound as a source of illusory movement is intriguing beyond this research and will be revisited later in this chapter. For now, these experiments are concluded with the understanding that without relying on any visual stimuli, solely through a sequencing of auditory stimulus, aural illusion of movement is possible.

3.2.2.2 Haptic Experiments

Figure 15 *Roller version 2 and 3 with the interchangeable bits*

I re-purposed the Roller built on the idea of a phenakistoscope (see Roller) later into a haptic device. This experiment aims to recreate the illusion that Frank Geldard and Carl Sherrick termed as the Cutaneous Rabbit Illusion (1972). Using the Roller[17] is an analogous interpretation of the original experiment and bears the limitations of the analogue when compared to the electronic equipment they used.

After numerous runs with various numbers and shapes of tips, I concluded the Roller an inadequate device in yielding haptic illusion. It was too heavy, noisy, and coarse to create a subtle illusion. Neither a smaller diameter roller, nor a different number of holes for tips made any difference. Moreover, this experiment echoed the insight gained with the Flicker Specs (see here): 'the movement observed through the flicker needs to be different than the original movement'. The roller itself was in movement, its bits were indicating the movement of the roller wheel, and this was perceived exactly as that movement by the participant; not an illusory occurrence. Although the roller experiment was not compatible with this illusion, it gave insight to the important consideration for the rest of the research (p.51): **the emerging illusory movement is supposed to be different if there is an original, actual movement.**

The final version of the haptic experiment later was created for the workshop series, and it was redesigned with an Arduino circuitry[18] - basic programmable

[17] Three Rollers were built. The first was discarded because it was too big. Of the smaller other two Rollers, one had 18 slots on its roller, the other 12. Tips of various sizes and shapes to go into the slots were made. The structure of the experiment was to place several tips into the slots and to roll the Roller on the forearm. The goal was to create a sensation similar to the Cutaneous Rabbit; with several tips touching the arm on different spots, the illusion would be achieved. However, the limitations were far greater than initially expected.

[18] Four motors were attached to an Arduino board, with each motor attached to the forearm by straps so that they could vibrate in individual sequential buzzes. A phone

boards - set up to appropriate the Cutaneous Rabbit Illusion. The original Cutaneous Rabbit Illusion experiment consisted of five taps at three points on the participant's inner forearm. In this series of exercises, both three and four points on the forearm were tried, with varying number of buzzes and frequencies. With the Arduino, the illusion was achieved every time as each participant felt something moving up their arm. In that sense, the Cutaneous Rabbit Illusion was successfully recreated, and it was confirmed that it is possible to create and perceive illusion of movement haptically.

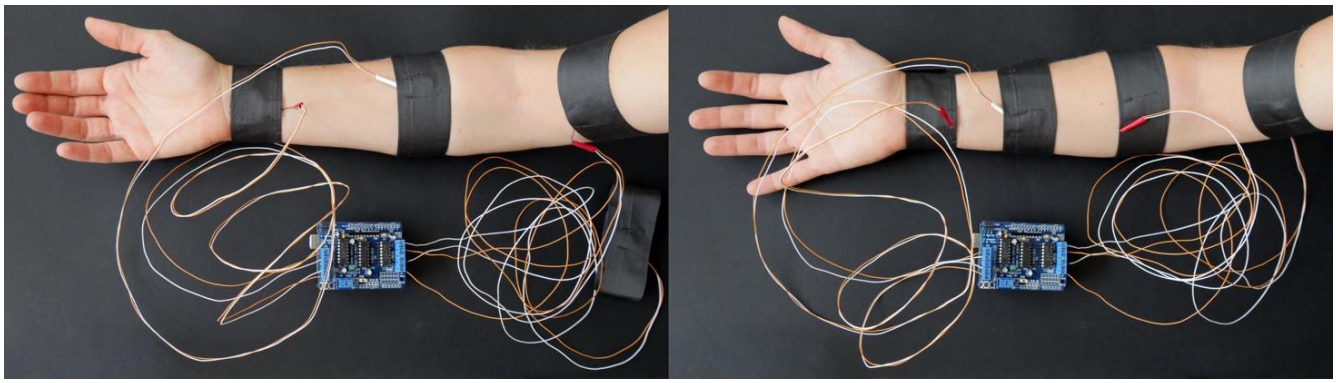

Figure 16 *The Arduino set up with three and four strap arrangements*

When analysed in terms of fixities, the Arduino version has limitations within the context of this research. Its design requires being created prior to the experience, which is very similar to the preparation of a film and that falls contradictory to this research's inquiry. Also, although it works to give the illusion, this is a crude, mechanical set up; not artistically presentable per se. It is acknowledged that haptic animation is full of possibilities to be pursued elsewhere, unfortunately not in this research.

The experiments examined in this section demonstrated possibilities and limitations for creating illusion of movement. As their purpose was to test

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application was specifically made for the exercise, giving control to buzz power, duration, frequency and when to start and stop.

conditions for the illusion, rather than achieving event-like ephemeral illusions, the experiments fulfilled their aim. The haptic experiment, therefore, concludes this section on tests and experiments, providing crucial findings on addressing and distinguishing illusory movement. Next is the incorporation of un-fixity and the characteristics of event into illusion of movement.

3.3 Introducing Event-ness

Experiments so far examined were about illusion of movement. The focus now shifts towards fixity, building on Erika Fischer-Lichte's fixed artwork and open-ended performance correlation. This is expanded through the characteristics of performance as laid out by Fischer-Lichte (2014, pp.18-46). The aim of this section is to demonstrate the gradual incorporation of event-ness into illusory movement through practice.

As discussed in Chapter 2, Erika Fischer-Lichte explains the four performance characteristics as mediality, materiality, semioticity, and aestheticity. The focus here will be first on materiality and mediality, which Fischer-Lichte explains as transience and bodily co-presence of performance respectively.

3.3.1 Degrees of Fixity

According to Fischer-Lichte (2008, p.75), 'performance does not consist of fixed, transferable, and material artefacts; it is fleeting, transient, and exists only in the present'. An art product, on the other hand, is an artwork that is fixed in its materials, which, even with material decay, gives a body to the work that remains as opposed to the transience of performance. Fischer-Lichte (2008, p.161-2) explains the difference as:

> The work of art is created as a 'thing' whose 'thingness' never vanishes. It exists as an artefact, which remains consistent with itself regardless of the recipient's presence or even despite the changes that might occur over time: the colors darken, collaged newspaper cuttings yellow, and so forth.

The omnipresent possibility that anything could be different at any moment is the reason that performance event inherently bears openness to change all the time. Open-endedness, or openness to change of a work can be manifest in different ways. A film strip could be understood as a fixity, or the decay of the celluloid film could be means for open-endedness[19]. 'Thing'ness Fischer-Lichte mentions is a fixity that may inevitably change with the rest of the world, but lacks the flow of change that comes with transience. It is important to choose a point of focus for open-endedness to approach animation with. Since the aim of *Co-Incidental Animation* is to create and experience illusion of movement simultaneously, the focus is on seeking flexibility to incorporate change and transience in the construction or emergence of the sequence that yields illusion of movement.

For most animated works, rather than being transient like a performance event, the fixed materiality of the animation product is due to the animation phenomenon being recorded onto some material form. Recording, as suggested before, is understood as any kind of fixing of a mark—a drawing, a photograph, a sound recording, bytes, pixels. A flipbook is a recording, too.

Recorded-ness is at odds with **open-endedness**. Once a work is fixed in a recording, it is determined. This is usually because of the material body of the work—if a work is cast in its material, it will be fixed. However, when the finished product is put through further process, becoming a part of a temporal work for example, this allows for change and some unfixity. Urs Fischer presented a series of sculptures in the Venice Biennial in 2011. These were made from wax and they were lit like candles. The sculptures remained lit throughout the biennial, melting until they no longer could. It was a durational piece and metamorphized

[19] Change would be inherent to any work that intentionally incorporates the decomposition of the material that gives a body to the 'art object'. The open-endedness and change Fischer-Lichte mentions is best understood in relation to 'thing-ness'.

as the days passed. This series of works are fixed in materials to begin with, but the objects become quite unfixed throughout the course of the work. Fischer could not control how each sculpture would change and end in its melted form. Even if the same wax sculpture were re-produced in the exact same way, how the melting would happen and result would neither be known to Urs Ficher, nor be entirely in his **control**.

Figure 17 *Urs Fischer, Untitled, 2011, (n.d.). © Urs Fischer. Courtesy of the artist and Galerie Eva Presenhuber, Zurich. Photo: Stefan Altenburger*

Through her analysis of Abramovic's *Lips of Thomas,* Fischer-Lichte (2008 pp.11-23), explains how the work is dependent on the audience's participation. When someone joins her, it becomes a collaboration—both Abramovic and the participant create the work together, through their encounter. Abramovic has no control over what the participant will do, who it will be, how long they will stay. Compared to Urs Fischer's work, Abramovic's work, as an example of performance event, has no fixed material to speak of even—only the participating bodies in space. The encounter is the performance, and the interaction between Abramovic and the audience member determines the course the performance

takes. Urs Fischer's work removes the maker and instead uses previously made objects or installed set ups to create an experience for the observers of the work. This could be identified as an 'open-ended installation event'. The objects of the installation (wax sculptures) are fixed, but how they perform in the event is undetermined and cannot be controlled. The melted sculptures as artefacts of a performance in the end revert to fixed object-ness.

Another consideration that is inherent to Fischer-Lichte's event-ness is **repeatability**. Abramovic's performance is understood as unrepeatable by Fischer-Lichte's standards of a performance event. Even though Abramovic can repeat the set up for *Lips of Thomas*, the work will be different every time because of the participants—the co-agents—of the work. From this it could be concluded that Fischer's installation event is also not exactly repeatable. The set up or the installation can be repeated numerous times, but the outcomes, how the wax will melt, will be different every time.

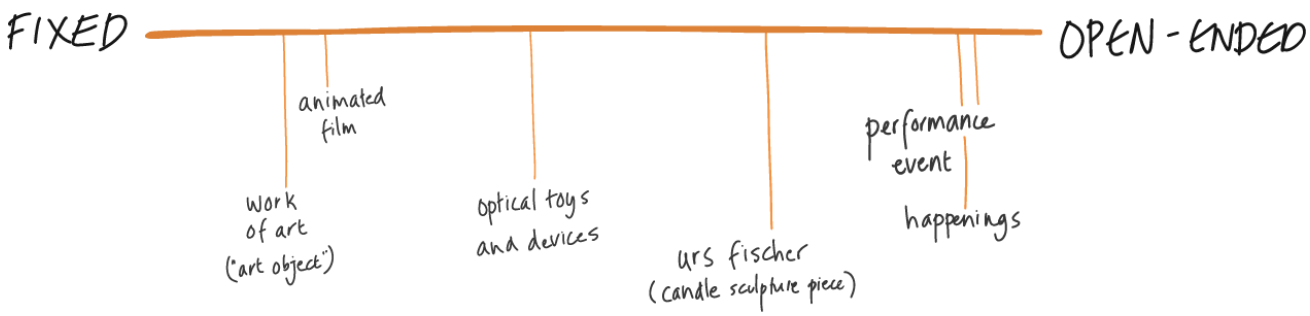

Figure 18 *Fixity range*

Imagining an unfixed animation practice involved thinking through a range of other practices in terms of what characteristics deemed a work fixed and the other not so much. Fixity Range (Figure 18) is designed as a framework to illustrate fixity as a range rather than a fixed-unfixed binary opposition, and serves to culminate alternative perspectives on fixity. The diagram illustrates the works and examples discussed in this section on a fixity range based on Fischer-Lichte's performance and art object opposition. Concepts like materiality,

recorded-ness, possibility of change and unpredictability determine where they might fall on the range. Working through a range is particularly useful, since these concepts prove to be not binary as either fixed or unfixed.

Below is a summary of the conditions against which to measure the practice when incorporating event-ness into illusion of movement, where both conditions should be met. First, illusion of movement is achieved when:

> a **multitude of individual stimuli** follow one another, perceptually connected through associative **sequencing**, perceived as a **singular entity in motion**.

Second, an illusion's event-ness should be checked by considering whether it is:

> **recorded**, physically fixed into material, or **transient**;
> **repeatable** and yields the same outcome when repeated, or is **unique**;
> achieved through **controlled** construction, or open to **change** (i.e. open-ended); and is an occurrence **experienced** by the **co-present** participant, through intentional observation (i.e. framing).

The next stage in the research is to seek how these two sets of conditions can be achieved at the same time.

3.3.2 Preliminary Event Hunts

The fictional temple chariot ride in Richard Williams' book (2009, p.12), and especially Bill Brand's *Masstransiscope* (2016) prompted looking for animation occurrences in daily life, starting on train rides. In this case, as there were no images previously painted on the underground walls, sequences to be animated had to already exist on site. The assumption was that anything could become a sequence with the effect of flicker—momentary intermittent obstructions to what was seen: columns on platforms, lamps along the way, and window frames seemed most possible.

Train[20]

Looking for possible occurrences on the trains started in London, UK. First choice was looking out at the platform and the commuters, but the images change too fast. Because of the proximity to the platform, what is seen beyond the carriage window turns into a blur. On a cross-country train ride, however, one might be able to enjoy more flicker-related illusions with lessened effect of the speed due, to further distances.

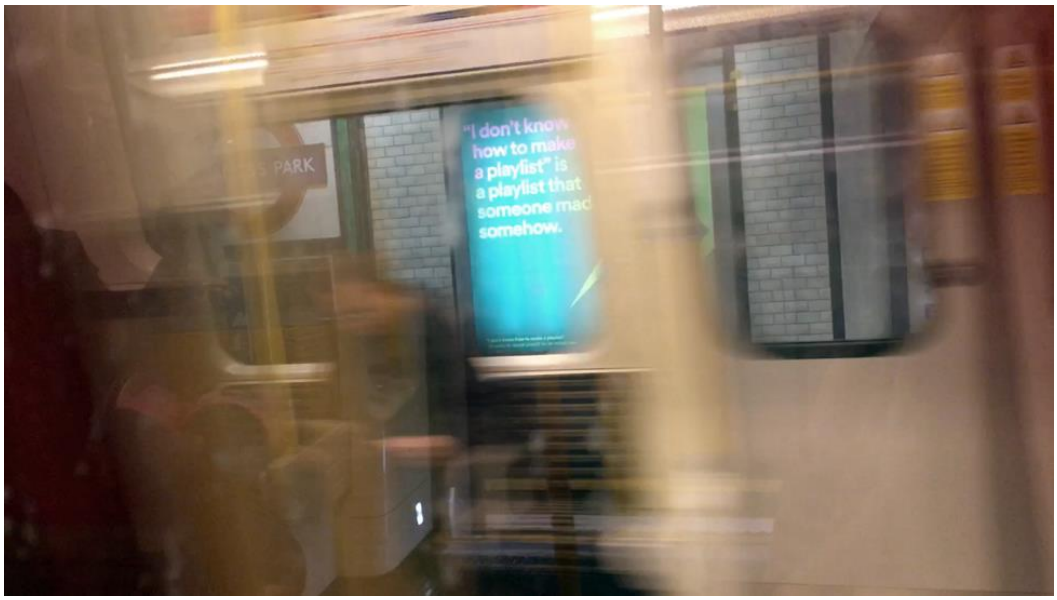

Figure 19 *Collecting illusions: Reflections on the train window.*

Another flicker option was the columns on the platform, but because these are usually too few and the speed of the train is usually at its lowest when platform columns are in sight, no flicker was observed through columns either.

Inside lit carriages of an underground train, many reflections fall on the windows: lights inside the carriage, the platform, people waiting on the platform, fellow passengers onboard and those getting off, the train passing by and whatever is on it. It was shortly noticed that direct reflection on the windows also do not

[20] These can be seen on the website via: www.co-incidental.com/preliminary-events-train

cause any flicker as these follow the continuous movement of what actually is. However, when there is another train going in the opposite direction, during that time the trains pass each other and the other train is in sight, a lot of flickering reflections take place. The flicker is most visible especially on slower lines, when the trains are slow enough so that the reflections and images do not blur. It is in these brief encounters that on the windows facing the other train will be subject to many changing images. (VIDEO)

The other train's windows and windowless metallic body reflect and block off light every moment the carriage windows of the two trains meet. These occurring reflections are blocked when the opposite carriage has passed, and the next carriage windows align and reflections happen again, and so the flicker pattern of reflection-no reflection-reflection pattern happens for the brief few seconds those two trains pass one another (VIDEO). There is no notable emerging image or movement to speak of, but rather the noting that flicker might occur in unlikely places to distort what is seen in the existing scene.

Sound illusion with birds

In addition to that experience on the train, a chance encounter one day led to realising that sound illusions can happen in natural settings on their own. By a pond on a day particularly crowded with kinds of birds, various quacks and coos coming from around the pond all of a sudden sounded like a single entity floating mid-air. This sensation happened only a few times, lasting a few seconds each time, during which it felt as if a cloud was moving around. It was not possible to tell the direction the sound was moving in. It is best described as a spatial illusory movement, similar to the experiments in the sound studio (see Sound Experiments).

Figure 20 *Collecting illusions: Sounds of birds around the pond in Kensington*

This experience is particularly hard to encounter randomly. Awareness of the possibility of this occurrence and attention to it are necessary, requiring effort from its observer/witness. Also, it is rare that random sounds relate to one another enough to be associated as a sequence, with intermittent breaks, while slightly surrounding the observer/witness enough to break obvious directionality[21]. Such a coincidence is not common; however, it is a transformative experience to encounter it when it happens.

Reflections on A Body of Water

One day, I noticed blue wavy lines dancing at the bottom of a pool (VIDEO). It was captivating to watch this moving image. I put my hands around my eyes to block out the surroundings, and with that I could focus just on the curves.

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[21] In my experience, the birds were all in front of me, but they were scattered and flying around. So, their sounds were coming from different places, and seldom did these random sounds fall into a sequential alignment. However, in the brief moments when they did, the experience of the space was transformed, similar to the experiment in the sound studio and to Cevdet Erek's sound installation in 2015.

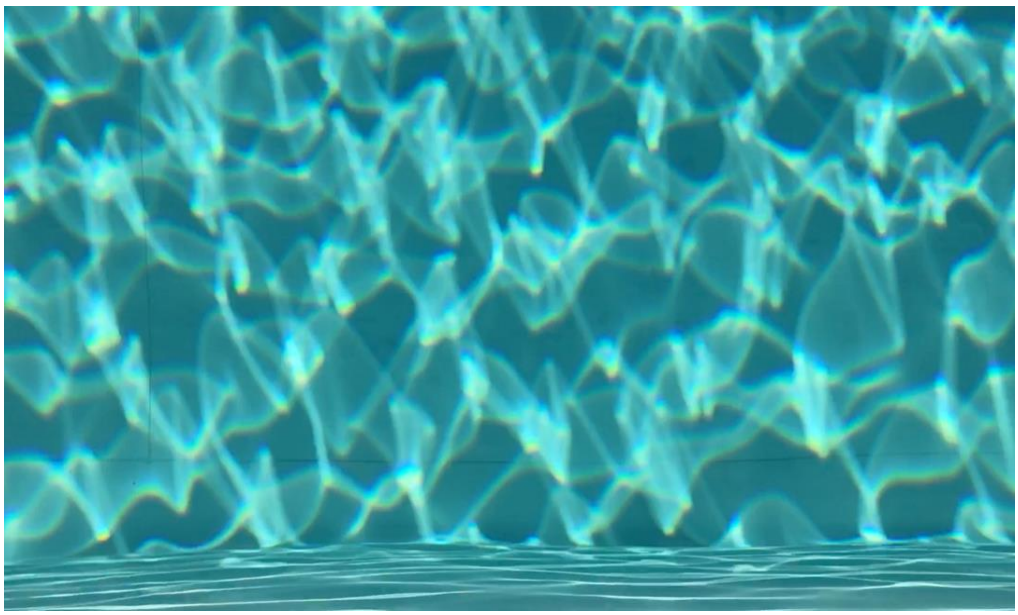

Figure 21 *Collecting illusions: Curves of light in a pool, framed out of context*[22]

These lines seemed to be moving at their own accord. Their movement was because of the gentle ripples on the surface of the water; however, this was not a direct representation of the ripples or their movement either. The lines did not move like the ripples; while the water rippled in a longitudinal direction, these blue lines seemed to go sideways, erratically.

The ripples on the surface of the water refracted the sunlight and caused moving lines to appear at the bottom of the pool. Because the ripples were in motion, they created new refractions in any given moment, causing these lines to constantly change. With each move of a ripple, these light beams hit the bottom of the pool in a different way, and they created new blue lines every time.

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[22] I documented this illusion with my phone. Zooming in helped discard all the surrounding details but did not change the visual experience. Unlike Jim Le Fevre's work, where the shutter of the camera causes the flicker to observe a normal movement, as if an animated sequence, what I recorded on the camera was the same as what I saw with my eyes. The flicker was happening on the surface of the water.

The blue lines are not images of the pool or the water itself. The movement of the lines is a new image, not one that can be seen as the water's movement. The blue lines are not representations of any of the sources that lead to its occurrence; they are new, occurring only because of the coincidental alignment of certain factors. A flipbook illustrates this phenomenon best (please refer to footnote[23]).

For this particular flicker occurrence, I could not conclude if the ripples are refracting the light continuously or in fragments; that is, whether the blue lines caused by the refracted light are a sequence of snapshots (whereby an illusion of movement occurs) or a continuous movement of an illusory image. Yet this was the first light-modifying water occurrence, and with further examples the movement illusion became understandable. These will be shared at the end of the chapter. What the pool occurrence demonstrated was that a sequence can be achieved by (1) the intermittent presence of stimuli, or similarly (2) the intermittent obstruction of a continuous source. Reasonably, these respectively resonate with the existing practices: (1) constructed animation film frames, and (2) time-lapse videos or strobe effect.

The examples explained here were the first 'natural' or in situ flicker incidents I encountered. Their significance lies not in how much illusory movement was observed through them, but rather in providing the understanding that flicker causing new image sequences and movements to be sensed (seen and heard), exists outside of specific cinematic, artistic, or mechanic constructs.

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[23] A flipbook provides a simple example of this phenomenon: When the flipbook is flipped, the thumb and pages move. The images on the pages and the movement of flipping the book are not related. Just as flipping the book activates an illusion, the water and the sun hitting the bottom of the pool creates blue lines, and with the movement on the surface of the water because of the gentle breeze, an illusion is activated by momentarily changing the layers of refracted blue lights.

3.4 Expanding

3.4.1 Collecting Events

Following the encounters on the trains, with the birds, and at the pool, I began to specifically look for flicker during my daily activities. Immediately trees came to mind: trees, with leaves or bare branches, almost always cause flicker. However, just looking at a tree will not provide the observer with illusion of movement (VIDEO). For the branches to create a flicker, they have to be moving. Usually a breeze will provide the necessary motion. These branches set in motion become the source of flicker. On the other hand, an object or someone standing still in the sun would cast (i.e. cause the emergence of) a static shadow. Figure 22 illustrates this idea:

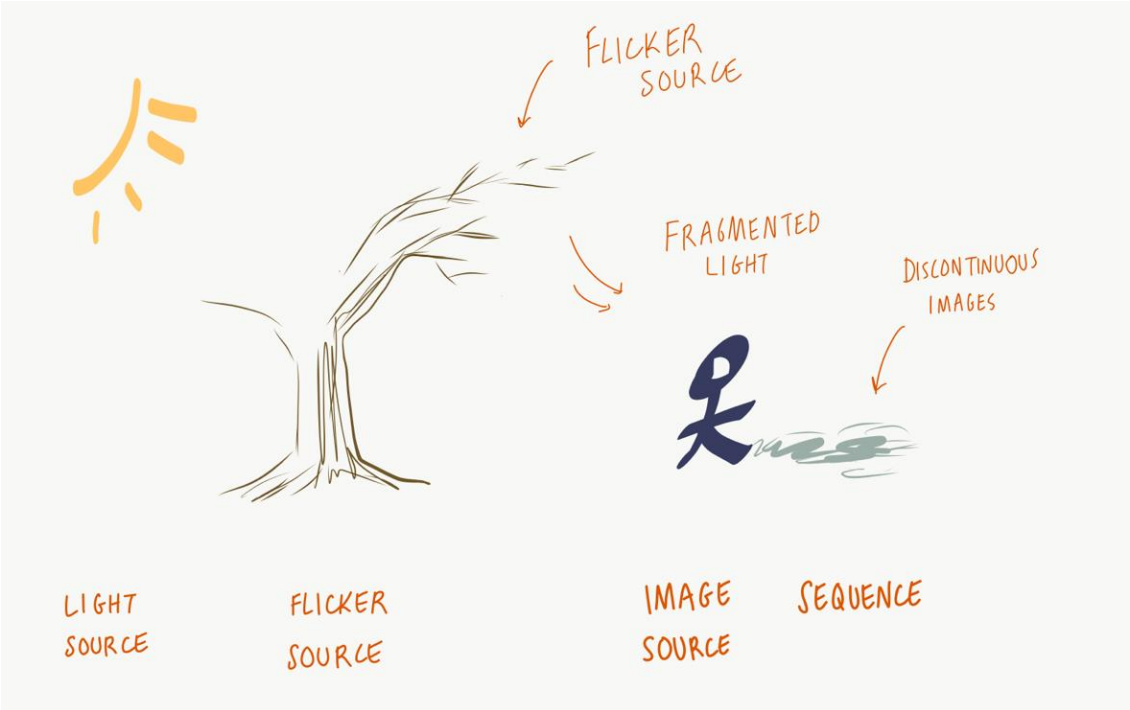

Figure 22 *Depiction of image sequence occurring due to flicker*

The branches gently swayed by the wind block the sun on and off, causing flicker. This creates the pattern of shadow-no shadow-shadow-… as long as all the constituents of the scene continue to be present. Hence the shadow that is supposed to be static as its source object, becomes fragmented into a sequence of images.

The best way to understand this effect is by simplifying the scene as shown in Figure 23: if a tree were not there, then the image (shadow), undisturbed and unfragmented by flicker (tree branches), would be continuous and still, like its still, unmoving image source (body or object) under the unblocked light source (sun):

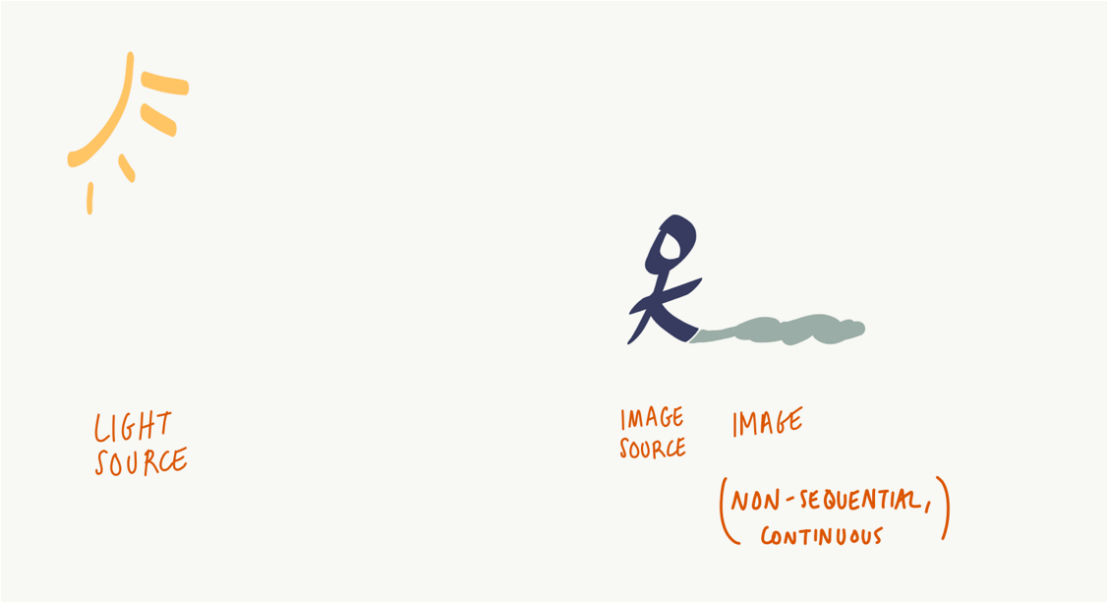

Figure 23 *Depiction of continuous image without flicker*

An example of such flicker happened when a piece of wire was flickering the sun and caused the shadow of my window handle to look like it was moving (VIDEO). The cable while moving in the wind, blocked the sun on and off - which caused different rapid snapshots of shadows on my wall, which, in a naturally formed sequence, caused the shadow to look like it was moving—while the object of which it is the shadow, does not even flinch (Figure 24).

Figure 24 *Handle, wire, and the sun*

This experience led to the insight that just looking for light flickering was not enough; there had to be something else, *an intermediary modifier*, for the light to interact with – something to cast a shadow, to reflect on to or off of. With this consideration the number of flicker occurrences increased, and I began to experience more illusions of movement. Water proved to be the richest source and provided the most encounters so far. Trees by rivers or ponds (VIDEO), shallow bridges (VIDEO), building facades (VIDEO; VIDEO), rocky seashores (VIDEO; VIDEO; VIDEO; VIDEO) were all causing moving images not representative of the movement of the water. An archive of encountered occurrences began to form[24].

[24] These videos present some examples. The archive in its entirety can be found on the website www.co-incidental.com/animation-events.

Figure 25 *Example of a flickering image under a bridge*

By this time, an idea of presenting findings to participants in a workshop had taken hold. Based on George Brecht's event scores / instructions, I organised the animation occurrences into categories, and ended up with five scores that generalised my experiences so far. I wrote them down as animation event score cards to share them with participants. In no particular order, the Animation Event Score Cards read:

Figure 26 *The envelope with the five animation event scores: the scores on the front, and a collection of anecdotes on the back of each card*

Sound and Spatiality	Reflections on a Surface	Water Surface
In a spot surrounded by things that produce various singular sounds.	Reflections off of an uneven surface of an object in motion onto a static object, causing an illusion of some movement on this second object.	A big body of unstill water Breaking up the continuity of the reflections on its surface. (Creating new images.)

Reflections & Commute	'Flicker'
On a train that passes by another one along its journey (knowing the route helps), By the window where the other train will pass (usually opposite the previously platform side), Among the layers of reflections on the glass, in the one that flickers – somewhat erratically.	On-off-on-off-on-… on■on■on■on■… A■B■C■D■E■… 1■2■3■4■5■… A continuity (experienced through sight / sound / touch) Broken intermittently by a pause / darkness / silence / void /… and becoming transformed through this interruption.

Figure 27 *Event score texts*

The cards are shown in Figure 26, and the scores written on the front of the cards are listed in Figure 27. At the back, examples of where and how they were observed were written. The examples served to help[25] put potential experiences in perspective. Each event score was designed to work as a conceptual and experiential kit equipping the participants to eventually frame and experience their own animation events beyond the workshop. These instructions do not dictate the occurrence or the experience, they do not fix any occurrences (see Robinson's comments on Brecht's events). They only provide frames in which flicker has been noted to occur[26].

3.4.2 Workshop Performance

In order to test the validity and accessibility of events as a practical tool enabling people to experience their own animations, I decided to do a workshop. This would allow to introduce findings to people and gather insights based on their reception and engagement. The workshop design evolved into one-to-one sessions with each participant. With an increasing emphasis on each session being a process of building together, the performance element became prominent. Hence these sessions were named workshop performances (WPs).

The WP was designed to gradually build up the participants' understanding of expanded notions of animations as explored in this research. This meant introducing the research findings with gradually less common concepts of animation, including the haptic and the sound animation as part of the process that led to animation events. In order to understand how an animation practice can be established as an event, the workshop performance foremost asks: *How*

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[25] As Steinman et al. (2000, p.2261) state, it helps to '[explain] what one expects to see under each of the stimulating conditions helps considerably'. The researchers were 'help[ing] naive observers see both φ and ß'. In this case, the help was with the unusual framing of certain occurrences as animation events.

[26] The card titled 'Flicker' focuses on the phenomenon directly.

can illusion of movement be presented as animation while experienced as an event?

Once workshop was decided on as a method, the practice elements were edited with participants in mind. For example, the haptic experiment, which was not possible through the Roller, was re-designed through digital circuit boards (Arduino) and illusion was achieved all the time. Figure 28 shows the contents of the workshop performance tools box[27]

Figure 28 *WP tools box*

11 workshop performance sessions with one participant per session took place. At the beginning of each session the participant was asked to list a few keywords regarding their understanding of animation. During each session, the findings of the research were explored together with the participant as animation exercises. As explained in the Exercises section below, these ranged from guiding the participant in creating a flipbook to experiencing strobe light effect on their hand. The keyword card was visited at the end of the session to see whether the

[27] The tools included: small papers, clips, and pens for the flipbooks; two Arduino setups, one for the haptic, one for light animation; headphones and metronomes for two separate sound exercises; one strobe light and spare strobe torch; black bag; spare cables and motors.

participant's notion of animation had changed (see Appendix B). Each session ended after the introduction of animation as an event, with event scores, similar to Fluxus scores presented in Chapter 2.

The primary research method employed for the workshop sessions in order to gather data is qualitative observation. In order to establish animation events as a practice, it was necessary to communicate it. Observing people engage with the exercises, receive animation event as an invitation and respond, their questions, suggestions and feedback provided the data to assess the accessibility of animation events as a practice. The participants were invited to send or upload their own observed animation events after the session. If they did, their contributions were added to the events archive. The rate of contribution provided insight on whether experiences of animation event were available to people other than me.

3.4.2.1 The Workshop Performance Exercises

The exercises progressively build on in order to familiarise participants with increasingly lesser familiar concepts of animation that emerge out of this research.

Light Cycle

This exercise demonstrates animation as a phenomenon beyond a filmic, or a narrative form. It does not yield images, only an illusion of movement. Source tests for this exercise can be seen here: (VIDEO), (VIDEO).

Figure 29 *Top left: rectangular light alignment; bottom left: bounce sequence*

Aim:

to illustrate how within the right settings, a sequence yields illusion of movement; to test the speed at which the participant ceases to identify lightbulbs individually, and sees a single moving light dot.

Equipment:

12 LED lightbulbs; a black foam board with holes; an Arduino circuitry coded to turn each lightbulb on and off in order; an application coded to connect with Arduino to control speed, turning lights and looping on/off.

Flipbook

The participant makes their own flipbook.

Figure 30 *Participants designing and flicking through their flipbooks*

Aim:

to demonstrate how stimuli in an animation sequence (frames on cards in this case) carry parts of the aimed movement onto the successive stimuli. Participant makes flipbook.

Equipment:

12 pieces of thick paper, approximately 7 by 5 centimetres; options of felt tip, ballpoint, and brush pens; a clip.

Haptic

The haptic motors are strapped on the participant's arm to test Cutaneous Rabbit illusion.

Figure 31 *Haptic with Arduino. On the left: a participant with four motors strapped; centre: haptic exercise equipment; right: a participant with three motors strapped*

Aim:	Equipment:
to recreate the Cutaneous Rabbit Illusion, and make participant feel an illusory movement up their forearm.	Four varied-length straps each with a haptic motor attached to the Arduino board, connected to a phone application coded for this exercise.

Sound with headphones

The participant listens to the sound experiment file created in the sound studio (in stereo conversion).

Figure 32 *Participant gesturing the field and directions of the space and movement experienced*

Aim:	Equipment:
to simulate the experience of animation in a 180-degree illusory field in front of the participant with headphones	Phone connected to stereo headphones; sound files from the experiments in the sound lab at RCA, converted into stereo files that could be played on devices like the phone or laptop.

Sound with Metronomes

The participant aims to create an illusory spatial sound with electronic metronomes by moving them around the space, varying beats and speeds as they choose. Tests for this exercise can be seen here (VIDEO); (VIDEO).

Figure 33 *Exploring sound with metronomes in the space with the participant. Participant leads*

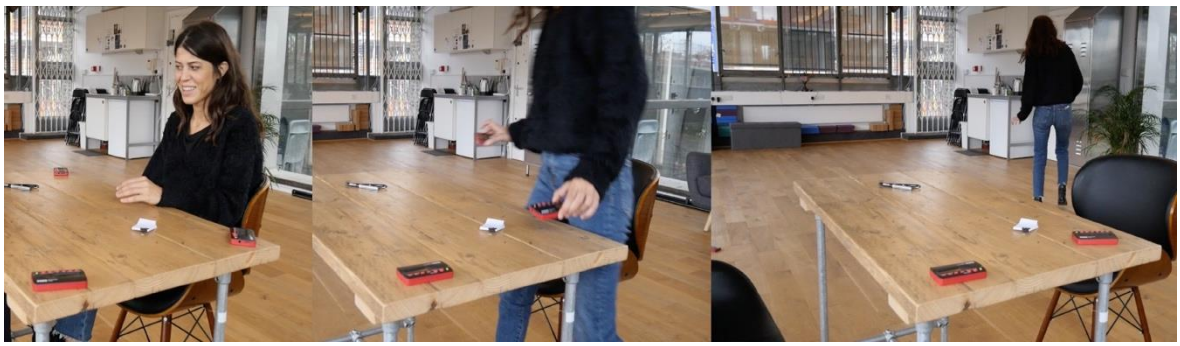


Figure 34 *Another participant leading the sound exercise with metronomes*

Aim:	Equipment:
to explore sound animation by using metronomes as individual sound stimuli; and to observe if an illusory space emerges through aural illusion of movement.	Five small digital metronomes, appropriating the original experiment in the sound studio.

Every participant approached the exercise differently. Some participants felt more at ease moving around, pushing the limits of suspension of their disbelief (in that these were just metronomes beeping in a room), and actually seek for animation through the sound stimuli.

Strobe

The participant places one hand into a black bag where there is a strobe light. They move their hand around and watch its movement get fragmented by the light. First attempt of this exercise can be seen here: (VIDEO).

Figure 35 *Participants observing movement of their hand in the bag with the strobe light*

Aim:	Equipment:
to demonstrate how animation is also achieved by fragmenting the actual movement with a strobing light. This exercise shadows Olafur Eliasson's *Fountains* work.	a black cotton bag (approximately 45 by 50 centimetres), a small strobing light (10 strobes per second)

Score Cards

The participant is handed their individual set of animation event score cards in order for them to try to experience their own events.

Figure 36 *The envelope containing the event scores and the lenticular print given to the participant at the end of the exercises*

Aim:	Equipment:
presenting the participant with the possible illusory movement occurrences based on what has been observed so far.	Five cards with instructions on one face, and example occurrences to date noted on the back.

3.4.2.1 Observations and WP Conclusions

The workshop performance had three objectives. In the table below, these objectives are presented with their outcomes, and evaluation.

Table 1 – Analysis of Workshop Performances

Objective	Outcome	Evaluation
Communicating the research findings to prepare participants for animation events	Practice elements were modified to give participants as much insight into research as possible.	The workshop organization worked well; the progression was successful. In all exercises done together, except the two sound exercises, participants experienced illusion.
Testing if participants felt animation through sound and haptic stimulation	Haptic was easily experienced; sound not so much.	Surround sound created in the sound studio was flattened into stereo, which caused a lot of spatial loss in experience. Metronomes presented numerous limitations (distracting sound, and limited beat rate).
Giving instructions to participants for them to experience their own animations events, and report back	Only 2 out of 11 participants responded back with animation events	The workshop may not have provided enough clarity for the participants to feel familiar with or propelled to seek their own animation events.

All exercises were designed to build familiarity with the animation events concept; and participants noted[28] to have gained an understanding about animation that is beyond cartoons and films because of the exercises. Therefore, the issues experienced in individual exercises are not considered problematic. The reception and experience of the animation event by the participants were more crucial. Original plan was to take participants out for a walk and seek illusions together. Due to the extra time this would require, they were instead shown the event archive of documented occurrences to date. They were handed event scores and invited to seek their own. Then, it was up to the participant to take up on the invitation. They were reminded twice over the course of eight months to send any occurrences they might have experienced, and two participants (Participant 9 and 11) did. The example video sent by Participant 9 does not have any illusions, whereas Participant 11 completely understood the essence of the work and sent over ten videos sharing animation events[29] (VIDEOS).

3.5 Discussion

Overall, the practical inquiries and tests for achieving illusion of movement ephemerally as an event provided these results:

- Mechanic rollers as designed in this research are not useful for achieving haptic illusory movement; however, digital set ups (i.e. Arduino) succeed in providing the illusion. Motors with cables have physical limitations in terms of how and where on the body they can be used. Wireless alternatives might be considered if available.
- Sound illusion responds well to studio construction, and not so much to sequencing with random sounds available in the surroundings.

[28] See Appendix A.

[29] For participant responses, alternatively refer to: https://co-incidental.com/participant-responses

- When 5.1 surround sound is compressed into stereo, the spatiality is also compressed (see Appendix B)
- Although total randomness with flipbook proves difficult in achieving a relatable sequence for the illusion to form, creating illusory movements with indeterminacy might still be possible with the unbound flipbook form if revised.
- Sharing with participants through the WP demonstrated issues in communicability and accessibility of the events. Experiencing illusion of movement as a transient event requires intention and awareness from its observer. Erika Fischer-Lichte (2008, p.12) writes about 'an in-between domain that is at first confusing' when the boundaries between artistic experience and everyday life are blurred. It is understood that this liminality, particularly within a task to experience something as unfamiliar as the animation events, left most participants irresponsive. Accompanying participants through an ordinary daily encounter becoming an 'event' may have had a more positive impact on their overall engagement with seeking events. Perhaps a workshop in the future could only be a walk, a hunt together with the participants without all the other exercises. Focussing only on the flicker and the event occurrence might make animation events more accessible.

As the primary aim of the research, Animation Events is discussed separately in the next section:

3.6 Animation Events

The above research process led to the conclusion that animation event is a practice that builds on the conditions necessary for illusion of movement to occur and embodies the core of event-ness of performance. Revisiting the four characteristics of performance described by Erika Fischer-Lichte (2014, pp.41-2) provides the necessary tools with which to analyse animation events. Table 2 below shows how these characteristics are manifest in or appropriated into animation events:

Table 2 – Animation Events Evaluation

	MEDIALITY *Bodily Co-presence*	MATERIALITY *Transience*	SEMIOTICITY *Meaning*	AESTHETICITY *Event experience*
Fischer-Lichte	Simultaneous presence of actors and spectators (i.e. all participants) in the moment	Transitory, ephemeral. Unlike a work of art (i.e. product), it is not fixed.	Meaning created through perception. Varies among spectators.	The aesthetic experience that emerges as and through the performance event.
Animation event (AE)	Actors[30] are conditions, elements within an occurrence that cause an illusory movement. Spectators are observers / witnesses. Co-presence in AE is appropriated as being present to the occurrence in the moment, on location.	The spaces, objects, instructions all remain afterwards, but the animation disappears never to be experienced the same again. AE is thus transient.	A new meaning occurs through the new image emerging through the flicker. This yields the illusory movement. In AE, the illusory movement is the new meaning.	AE is to be found in daily life; when illusory movement is observed, it transforms into a brief aesthetic experience within the ordinary.

An animation event is unrepeatable, as Fischer-Lichte (2014, pp.41-2) notes an event should be. As a chance occurrence, it is not controlled by any individual either. The observer chooses to look for it or to look out for conditions that might yield an illusion but cannot control or predetermine what occurs, or that anything occurs at all. An animation event demands the attention and intention of its observer. The transformation that is part of the event will only happen when the observer allows the flickering lights to transform what they are seeing.

As I encountered more flicker occurrences, a simpler way to explain it, to understand and share it with others emerged. When the components of a flicker

[30] The 'actors of the performance' has been interpreted as the deliverer of the event for this practice. In that sense, the conditions that bring about the illusion are the actors: the sunshine, the leaf, the wind – all the conditions that without a construction or design, that come together in a chance moment, form an alignment that creates a flicker, altering what would have been perceived without its intervention.

occurrence are understood as the sources of light, flicker, and image where they all yield a sequence, resemblance to cinematic flicker can be noticed:

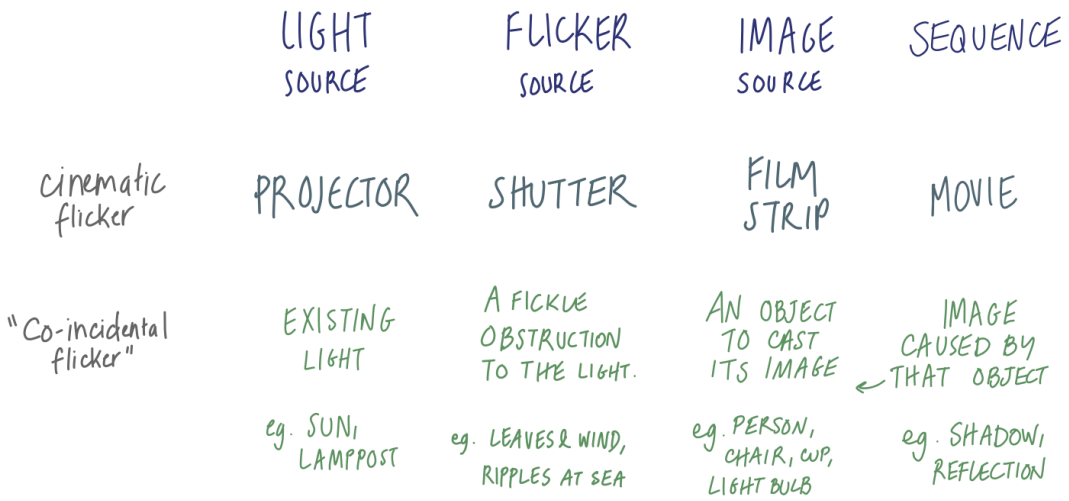


Figure 37 *Co-incidental flicker in reference to cinematic flicker*

'Co-incidental Flicker' is named after this research as it encapsulates the flicker conditions observed and noted during this investigation. When compared[31] to the cinematic flicker, in a co-incidental flicker, existing light replaces the projector light; an object causing the light to flicker replaces the shutter. As discussed previously in Figure 22, the physical object and the sequence that derives from it, replace the film strip and the resulting moving image sequence, respectively.

The animation events encountered are collected in an online archive[32]. The list of the occurrences (see Appendix C) illustrates that the flicker I searched for and found in ordinary daily settings is an extension of the cinematic flicker. The videos forming the animation events archive are fixed recordings, but only serve

[31] Please see Appendix D for a diagram with further explanation and examples.

[32] www.co-incidental.com

as documentations of the occurrences. An interesting finding emerged while making an inventory of the archive (Appendix C): out of the 76 documented occurrences[33] 54 are reflections off of water onto other surface (VIDEOS), 17 occur on the water surface as ripple-shadow (VIDEOS), three as refractions (one at night) (VIDEO), (VIDEO), (VIDEO), one shadow flicker (VIDEO), and one occurrence of both surface ripple-shadow on surface and reflection (VIDEO). Water provides both flicker and image modifications, as well as a surface to observe sequences on.

A discussion relating to the animation events surrounds the issue of relevance of the illusions. A particular problem is how to *read* the illusion, what to make of it, how to experience it, which are left open. This decision was to avoid becoming descriptive and prescriptive. For example, some of the occurrences with rocks above water, it was possible to read the flicker as flames, as in Figure 38.

Figure 38 *Flicker reflections on a rock (VIDEO)*

Similar anthropomorphisms or pareidolic readings were possible in many occurrences. However, I decided to move away from them to focus on the

[33] Until 27.11.2019

phenomenon of the illusory movement as 'the inexistent movement of something that is not there'. Nevertheless, it is noted that the lack of a direction or meaning made the work unrelatable for some people. The research succeeded to bring animation and performance together in 'illusory movement as event', and further work will aim to establish the animation events as a practice accessible to other people.

In order to show an example of the illusory image and movement, one of the videos is modified in stages. The patches of shadows that emerge due to the movement of the water surface become more legible as black patches through a posterization process in Adobe PremierePro. It is these patches of dark and light that create the on-off effect of flicker in reality. Posterization reduces the visual data, which helps to highlight this flicker effect. The video series (VIDEOS) illustrate that the movement and the direction of the patches are different than the water's.

Figure 39 *Stills from posterised video series*

The posterised images help explain the phenomenon observed on the water. When observed intently, the illusion emerges: the blotches seem to form a continuity and this evolves into an image in motion. This image has its own movement, direction and rhythm; it is neither a representation nor a copy of the movement of the water. Thus, an illusory movement in this abstract moving image (in the original waterside occurrence) can be observed. This would be an animation event.

In conclusion, this chapter provides the narrative for how the practice of animation events were developed in the attempt to answer the research question. The concepts of illusion of movement and event-ness as delivered in

Chapter 2 were tested and established as guidelines for the practice throughout its development. The animation events take place at an in-between state where art meets daily life, requiring the presence of the observer to the occurrence. As a practice, it falls between media of animation and performance; an intermedium. Dick Higgins's (2007, p.19) comments on visual poetry resonate:

> Concrete and some of the other visual poetries are intermedial; they lie between literature and visual art, and there is fusion between these so that we cannot deal with just one of their origins but must deal with the work as both visual and literary art. [...] We view the work, and our own horizons fuse accordingly [...].

The work undertaken in this chapter arrives at and concludes with revisiting the criteria to achieve illusory movement events:

> a **multitude of individual stimuli** follow one another, perceptually connected through associative **sequencing**, perceived as a **singular entity in motion**.

Also checking an illusion's event-ness by considering whether it is:

> **recorded**, physically fixed into material, or **transient**;
>
> **repeatable** and yields the same outcome when repeated, or is **unique**;
>
> achieved through **controlled** construction, or open to **change** (i.e. open-ended); and is an occurrence **experienced** by the **co-present** participant, through intentional observation (i.e. framing).

CHAPTER 4 : CONCLUSION

Co-incidental Animation research arrives at Animation Events as a practice of observation, collection, and instructions to mark encountered occurrences of illusions of movement. This practice is proposed as an answer to achieving simultaneity in the creation and experience of animation as an immediate and ephemeral event. Thus, I term this enquiry of animation event as 'co-incidental': a chance illusory movement that incidentally happens to occur, to be experienced by an observer present to its occurrence in its unique moment and place of creation and existence.

The research question, 'how can animation be as immediate as a performance event, simultaneously created and experienced, never to be repeated?' was addressed through the three-theme structure of perception, challenge and expansion of this study. Taking animation out of the cinematic experience context, the research focussed on illusion of movement as the perceptual condition to explore animation with.

Donald Hoffman (see p.23) explained that everything we perceive, particularly visually, is a construct of our minds. This is best exemplified in a movie, and Hoffman gave the example of a fist approaching frame by frame. This is the animatic construction of frames. Dan Torre (see p.23) suggested three processes to animation: construction, animative, and presentation. Construction, also taken as a theme in this research, is possibly the one attribute of the animation form agreed upon among animation scholars, as Lilly Husbands and Carole Ruddell pointed out (see p.13).

However, the construction that seems essential to the form, is only one part of the creation process of an animated work. The layers of separated processes, adopted from Torre (see p.23) as construction, production and presentation, contradict the immediate experience of an unforeseeable illusory movement in the emergence of a sequence.

Erika Fischer-Lichte (see p.13) proposed simultaneous production and reception as an alternative to the fixing production of art object. She defined art object as the opposite of performance event where the transience, ephemerality, irreproducibility and unrepeatable uniqueness of an event was missing in the fixed, transferable permanence of the art object.

Adopting Fischer-Lichte's (see p.28) four characteristics of performance, material fixities relevant to animation practices and illusion movement creation were examined. This allowed to focus on flicker as a structure for causing illusory images and movements. Understanding the importance of flicker in illusory movement and realizing that it can extend beyond constructed mechanisms into daily life led to 'co-incidental flicker': an approach to understand possible ways to observe occurrences. Establishing event-ness for illusory movement emerged out of an ongoing observation of flicker occurrences. Event-ness of illusory movement is animation that exists only in its time and place of occurrence, immediate, and ephemeral, never to be repeated again; thus, providing an answer to the research question.

4.1 Contribution

Co-incidental Animation contributes to the field of animation in three ways:

- offers an extended organisation of how 'animation' can be categorised (Figure 6). This is intended to help with the lexical confusion that arises regarding the use of the word 'animation', which is already hard to define as discussed in Chapter 2;
- an understanding of animation through illusion of movement was devised for the research (see pp. 66), which does not limit the phenomenon to vision or frames; therefore, including possibilities through senses and practices that expand beyond vision and filmmaking;
- proposes the animation event as an intermedium practice that sits between performance and animation, that embodies ephemerality and immediacy while working with illusion of movement. For other

practitioners working with the animation-performance relationship and looking to incorporate more event-ness into their work, the criteria employed in this research (see p.66) might prove useful—the criteria to check if the work is:

recorded, physically fixed into material, or **transient**;
repeatable and yields the same outcome when repeated, or is **unique**;
achieved through **controlled** construction, or open to **change** (i.e. open-ended); and is an occurrence **experienced** by the **co-present** participant, through intentional observation (i.e. framing).

4.2 Limitations and Ways Forward

Co-incidental Animation is an interdisciplinary research project that developed an intermedia practice at an intersection of cognitive psychology, performance and animation. Working within the scope of a thesis, the research required focusing only on a limited section. However, certain possibilities presented themselves as potential findings of value if taken up by future researchers.

Approaching ephemeral, 'co-incidental' illusion of movement through collaborations with cognitive psychologists could yield interesting results both for artistic endeavours and in furthering perception of illusory movement in daily human activities. Bringing the scientific experimentation into the artistic approach together would alleviate questions such as those I encountered with the blue lines at the pool where several optic illusions occur.

Wearables offer avenues for exploring haptic phenomena; these might offer possibilities to expand haptic illusions such as the Cutaneous Rabbit. Increasingly, film studios are investing in including more senses into the cinematic experiences. These might offer mass entertainment opportunities; however, there is still need for the analogue, non-spectacle experience. Including other senses into the illusory movement experience offers not only expansion in animation practice, or includes performative elements, but also

allows for individual's connection to the world. It might offer community connection and reach people with disabilities. Not being limited to one sense in animation experience opens up rich possibilities for practice.

The next steps for animation events and *Co-incidental Animation* come from another limitation: the WP not achieving the enthusiasm for and participation in event observation by those handed event scores. As the co-incidental animation research continues, and ways I can access 'co-incidental flicker' increase, it might become possible to reconsider ways of communicating and presenting the animation events in a different—perhaps simpler, shorter, and immediate—way in the future.

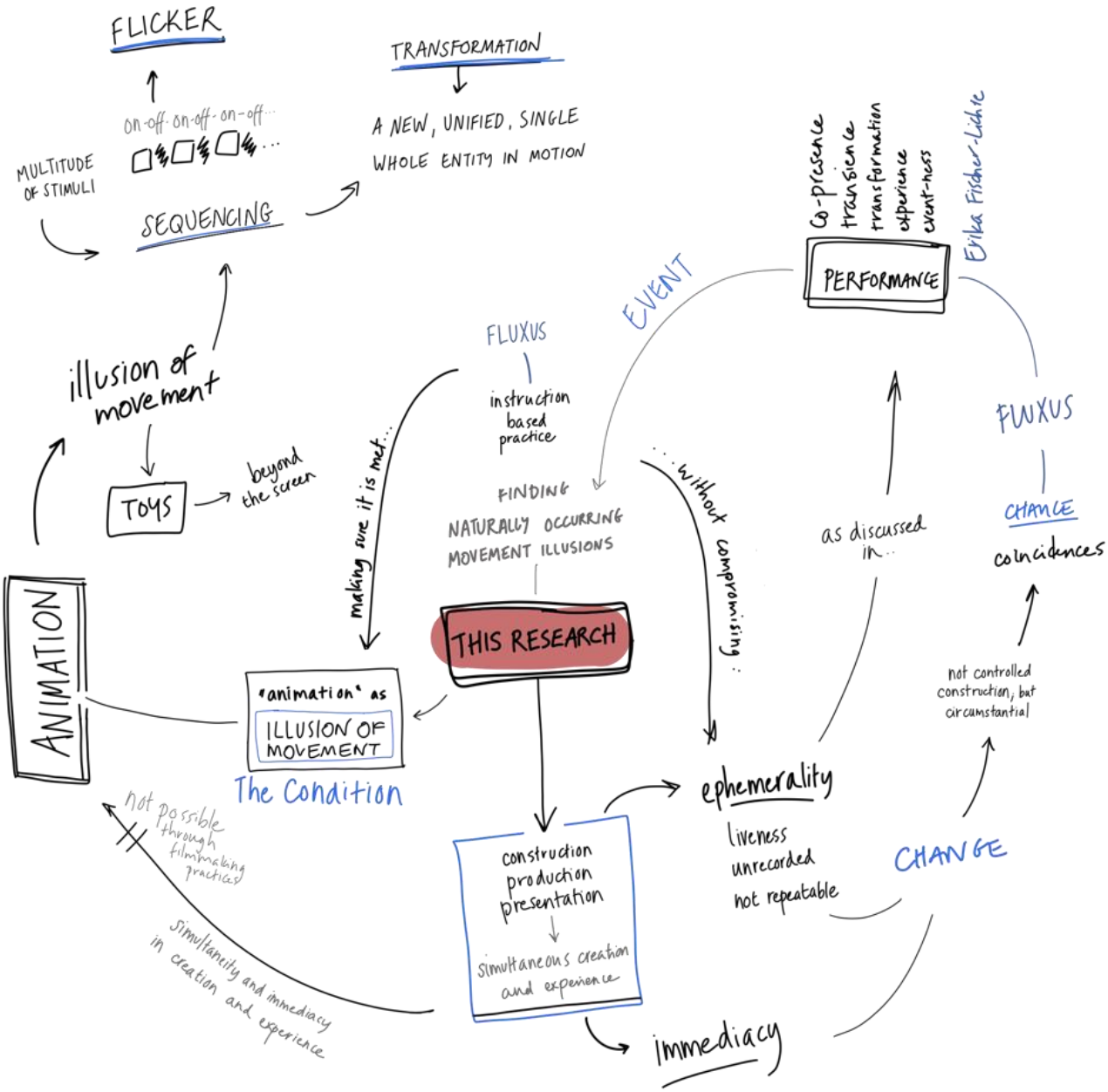


Figure 40 *The map of this research, 2019*

APPENDICES

Appendix A

Workshop Performance participant responses to question

Participants were asked for several keywords at the beginning of the workshop performance, and once again at the end. These were written down on each participant's card. The aim was to assess how much (if any) effect the workshop performance had on their understanding of animation.

Table 3 – Participants' keywords for what they think animation means before and after their Workshop Performance session

Participant	Before WP	After WP	Shared any events?
1	Pixar Relatable characters Voices Acting Simplicity for comprehension Idealization	Labour Improvisation [Something I] can make "animation is in the eye (or ear) of the beholder!"	No
2	Moving image Cartoon Funny voices Beautiful Hand-made Funny voices	The space in between Movement that is framed It does not have to be "front side" Transformation from a to b is needed it's easy, cheap, and doable I feel like I can make my own animation events	No
3	Spliced time Splices of time Duration Time Rhythm Still + duration Stop-frame	The way space is inhabited by a sensory stimulus.	No

4	Moving frames Continuous Cartoons Disney	Catching the movement path. No need to see it. I can "visualize" even when I don't see it. Not something that needs to be done on computer Brain filling in the gaps No longer limited to visual frame, or cartoons	Sent a photograph. Looked like an optical illusion, not an illusory movement,
5	Studio Ghibli Manga Cartoons	[Works with] any stimuli. Multi-sensorial.	No
6	Thought-provoking Interesting moving images Cartoons Animated films Stop motion; children and adults Political Walt Disney Being a parent Powerful	Movement in the leaves Sun in leaves Sound in a room VR	No
7	Cartoon Disney Phil Collins (NOT Mulloy)	Bugs and Water! Accessibility No need to be in a cinema It could be part of life I can see it in other ways now.	No
8	Cat – Sylvester Putting spirit into something Something flat becomes moving	Space Traditional animation is over-informative I don't want to be served movement, I want to be a part of it. No more passivity I do feel activated now. Sound becoming a colourful line.	No

9	Cell work and layers of incremental difference Flip - Disney Deliberate errors in animation to test the viewer's attention Moment of "have I seen it or haven't I?" — the in-between	Unexpected Serendipitous Unplanned Unable to be re-created A singular movement in time rather than a continuum A moment of fortunate coincidences (part of life) Replay is now irrelevant. Recognizing something has happened. Recording is irrelevant. A different sharing experience.	Sent a video of reflections on water (it is on someone else's Vimeo site). There was no illusion.
10	Cartoons TV Flipbook The booklet you flip	A singular moment where your mind goes beyond the expected. Tiny moments of magic. The environment altered your perception. Magic. Available [to me]. Awareness of the possibility.	No
11	Animated films from my childhood. *Fantasia*; Disney films. *Pink Panther* motion graphics / credits.	Walking light. Sound moving in space. Spatial illusion. Might be an experience in daily life. Moving sensation. Does not have to be visual.	Shared 10 videos of own event occurrences.

Appendix B

Workshop Performance Sound exercise

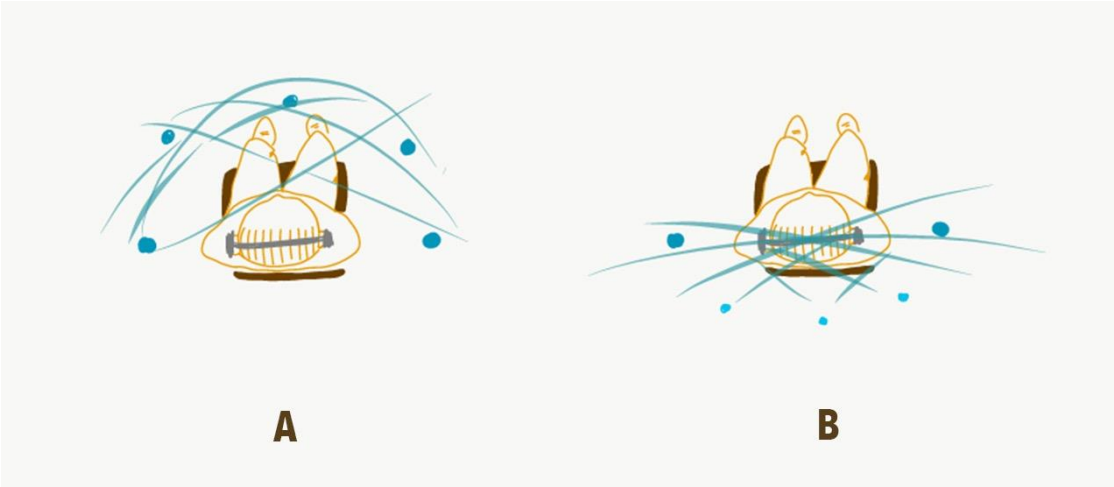


Figure 41 *How participants experienced the 5.1 surround sound flattened into stereo*

The blue curves in diagrams A and B show respectively the intended and the experienced spatial effect of the sound exercise with the headphones.

The blue dots indicate approximately where the sound stimuli were sensed to be in space. Diagram A show where the sounds stimuli were expected to be sensed, based on where the speakers were in the original creation of the sound file, as well as in my personal experience of the exercise. Diagram B depicts what most participants experienced. The darker blue dots on the two sides indicate that they were sensed strongly, whereas the smaller and brighter blue dots show how the participants experienced those as weaker bits of sound behind them. Most participants did not sense anything noticeable in front of them.

Appendix C

List of observed and archived Animation Events

#5489 Reflection

https://co-incidental.com/video?v=295384512

#5221 Water reflection on Leaves

https://co-incidental.com/video?v=295389287

#5207 Water reflection on Leaves

https://co-incidental.com/video?v=295389410

#5474 Water reflection on Leaves

https://co-incidental.com/video?v=295389863

#5542 Bus reflection

https://co-incidental.com/video?v=295391353

#5515 Leaves

https://co-incidental.com/video?v=295391386

#5504 Tree Trunk

https://co-incidental.com/video?v=295391474

#5474 Leaves

https://co-incidental.com/video?v=295391612

#5463 Branches and Leaves

https://co-incidental.com/video?v=295391662

#5462 Branches

https://co-incidental.com/video?v=295391701

#5197 Leaves and Branches

https://co-incidental.com/video?v=295403716

#5200 Leaves and Branches

https://co-incidental.com/video?v=295403761

#5211 Trees, Leaves and Branches

https://co-incidental.com/video?v=295403801

#5226 Leaves

https://co-incidental.com/video?v=295403842

#5509 Leaves (Reflection)

https://co-incidental.com/video?v=295403903

#6060 Reflection on the Rocks

https://co-incidental.com/video?v=295403953

#6290 Reflection on the Rocks

https://co-incidental.com/video?v=295403995

#2205 Reflection

https://co-incidental.com/video?v=354843237

#2207 Reflection

https://co-incidental.com/video?v=354843260

#2256 Reflection

https://co-incidental.com/video?v=354843289

#2251 Reflection

https://co-incidental.com/video?v=354843375

#2258 Reflection

https://co-incidental.com/video?v=354843476

#2262 Reflection

https://co-incidental.com/video?v=354845279

#2273 Reflection

https://co-incidental.com/video?v=354845586

#2502 Reflection

https://co-incidental.com/video?v=354845765

#2505 Reflection

https://co-incidental.com/video?v=354845788

#4218 Reflection

https://co-incidental.com/video?v=354846226

#4221 Reflection

https://co-incidental.com/video?v=354846275

#4233 Reflection

https://co-incidental.com/video?v=354846310

#4475 Reflection

https://co-incidental.com/video?v=354846423

#4477 Reflection

https://co-incidental.com/video?v=354846484

#4481 Reflection

https://co-incidental.com/video?v=354846530

#4486 Reflection

https://co-incidental.com/video?v=354846579

#4516 Reflection

https://co-incidental.com/video?v=354846618

#4518 Reflection

https://co-incidental.com/video?v=354846653

#4521 Reflection

https://co-incidental.com/video?v=354846686

#4525 Reflection

https://co-incidental.com/video?v=354846728

#4530 Reflection

https://co-incidental.com/video?v=354846745

#4537 Reflection

https://co-incidental.com/video?v=354846770

#4540 Reflection

https://co-incidental.com/video?v=354846803

#4543 Reflection

https://co-incidental.com/video?v=354846831

#4546 Reflection

https://co-incidental.com/video?v=354846860

#4549 Reflection

https://co-incidental.com/video?v=354846905

#4559 Reflection

https://co-incidental.com/video?v=354846938

#4564 Reflection

https://co-incidental.com/video?v=354846971

#4570 Reflection

https://co-incidental.com/video?v=354847007

#4579 Reflection

https://co-incidental.com/video?v=354847041

#4657 Reflection within surroundings

https://co-incidental.com/video?v=354847124

#4553 Reflection

https://co-incidental.com/video?v=354847461

#4574 Reflection

https://co-incidental.com/video?v=354847507

#4576 Reflection

https://co-incidental.com/video?v=354847554

#4579 Reflection

https://co-incidental.com/video?v=366874618

#5624 Reflection

https://co-incidental.com/video?v=375780248

#6263 Night light - Close Up

https://co-incidental.com/video?v=295387833

#4482 Water Surface - Screen recording

https://co-incidental.com/video?v=295392036

#5685 Ripple and Shadows

https://co-incidental.com/video?v=/295393566

#7173 Water Surface Ripple and Shadow – Screen recording

https://co-incidental.com/video?v=295394816

#5068 Water Surface - Screen recording

https://co-incidental.com/video?v=295395224

#8142 - Water Surface - Screen recording

https://co-incidental.com/video?v=295403658

#6369 Water Surface

https://co-incidental.com/video?v=295404057

#6371 Water Surface

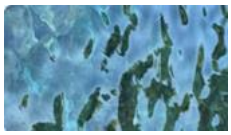
https://co-incidental.com/video?v=295404103

#6430 Water surface

https://co-incidental.com/video?v=295404192

#6356 Water Surface

https://co-incidental.com/video?v=295406627



#6374 Reflection rotated right

https://co-incidental.com/video?v=375765393

#4381 Water (Surface and Layers)

https://co-incidental.com/video?v=354846348

#4383 Water Surface

https://co-incidental.com/video?v=354846387

#2511 Water Surface

https://co-incidental.com/video?v=354845886

#2526 Water Surface interrupted

https://co-incidental.com/video?v=354845961

#2542 Water Surface

https://co-incidental.com/video?v=354846007

#2546 Water Surface

https://co-incidental.com/video?v=354846060

#2578 Water Surface interrupted

https://co-incidental.com/video?v=354846108

#2509 Water Surface

https://co-incidental.com/video?v=354845827

#2497 Combo: Water Surface and Reflection

https://co-incidental.com/video?v=354845663

#8136 Shadow

https://co-incidental.com/video?v=363155532

#8896 Refraction on two sides

https://co-incidental.com/video?v=366879744

#8892 Refracted Light

https://co-incidental.com/video?v=366880059

Appendix D

In this additional diagram, the process of how illusory movement occurs in projected films (at the top) and animation events (given through examples at the bottom) is broken down into elements to illustrate how they parallel each other:

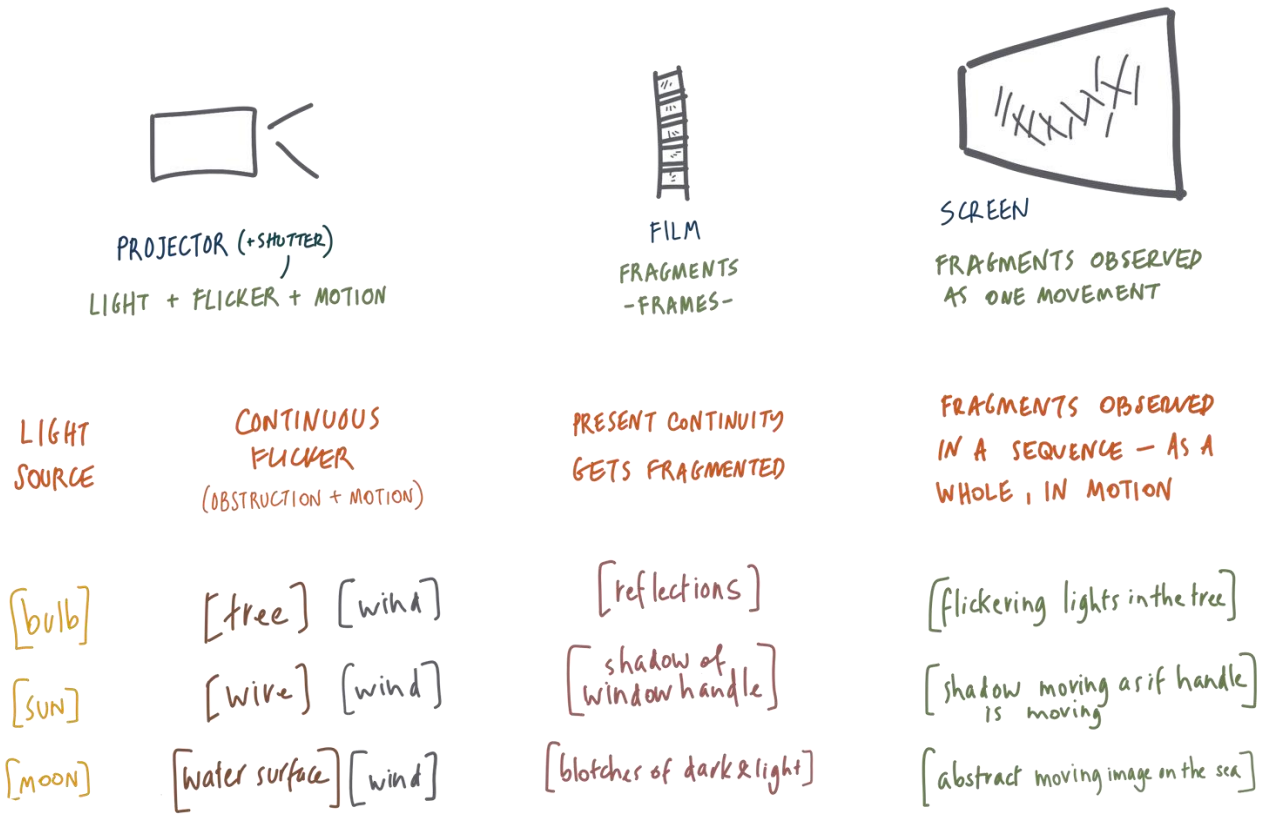


Figure 42 *How illusory movement occurs in projected films and in animation events*

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