USING THE *MAGIC IF* TO CIRCUMVENT THE PROBLEMS FOR THE ACTOR WORKING WITH GREEN SCREEN TECHNOLOGY

by

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DECLARATION BY CANDIDATE

I hereby declare that this dissertation for the degree Magister Artium at the Department of Drama, University of Pretoria is my own work and has not previously been submitted to any other institution of higher education. I declare that all sources cited and quoted are indicated and acknowledged. This dissertation was processed by Turnitin and obtained a similarity index of 1%.

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NH JACOBS

DEDICATION

This study is dedicated to my loving parents. To my father who worked hard his entire life, allowing me to fulfil my dreams. You are missed. To my mother, thank you for your never-ending support and encouragement.

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When this process started I had no idea what was in store for me, nor did I have any idea of the magnitude of what I had taken on. Thus, this adventurous and insightful undertaking in terms of the writing of this dissertation was made possible not by a single individual, but by many. I would therefore like to thank the following people:

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ABSTRACT

When portraying a character in a fictional world the actor is faced with many challenges. To circumvent these challenges, he must become congruent with the reality of the fictional world. In order to do so, the actor has to 'believe' in the circumstances of the unfolding scene and live 'in the moment'. These external circumstances act as stimuli which the actor uses to create and consequently 'believe' in the environment that the character inhabits. However, the use of green screen technology in special effects limits or eliminates these stimuli and the external circumstances.

Green screen is a technique used in film and television that allows the filmmaker to film an actor in combination with a green screen and then replace the 'green' with anything the filmmaker requires. This allows for compositing to occur and the filmed reality to be manipulated. However, this technology challenges the actor's 'belief' and behaviour, thus affecting congruence with and the (photo)realism of the created fictional world. In a green screen environment the actor is challenged to imagine, experience and act in line with the circumstances of the fictional world that will replace the green screen, instead of the green environment in which he finds himself.

One acting strategy that elicits imagination, action and feeling is Stanislavsky's notion of the *magic if*. Accordingly, this dissertation proposes that this strategy can assist the actor in circumventing the challenges that arise when working with green screen technology. Stanislavsky developed his acting principles by observing human behaviour in an attempt to use the mind–body paradigm in circumnavigating the acting moment. The field of cognitive neuroscience has also investigated human behaviour and the mind–body paradigm and recent discoveries have increased understanding of the fields. These discoveries have validated the notion of the *magic if* and the components it incorporates. Yet, the discoveries surrounding the notion of the *magic if* and, subsequently, the increased understanding of the concept have not to date been applied to acting with green screen technology. It is therefore hypothesised that, by triangulating the challenges of 'green screen acting', the principles of the *magic if* and the knowledge gained from cognitive neuroscience, an

acting strategy can be developed that will assist the actor in the green screen environment and thus create verisimilitude with the fictional world.

This hypothesis has led to the theoretical development of explorations that will strengthen the skills the actor needs in order to apply the notion of the *magic if*; as well as an acting strategy to assist the actor when entering the green screen environment.

KEYWORDS: Green screen, acting, *magic if*, cognitive neuroscience, imagination, bodymind, Stanislavsky, film acting, psychophysical, imagery, sense memory, communion, blue screen, actor, visual effects, matte processing.

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INTRODUCTION

1.1 CONTEXTUALISING THE ACTOR'S PROBLEM

In order for an actor to create a character that is congruent with the reality of a play, he[1] needs to create that reality for himself within the setting of the scene. According to Vakhtangov (1983:141), this is what Stanislavsky[2] called "scenic faith" or, stated otherwise, the ability of an actor to believe in the circumstances he is provided with. These "given circumstances" can be internal or external. External circumstances can be seen as those that emanate from the world outside the actor. McGaw, Stilson and Clark (2012:45) offer the following as examples of external circumstances:

- script (plot, place, time)

- directorial changes

- costumes

- environment

Internal influences, on the other hand, are what the actor's "character" perceives or feels toward these external circumstances. An actor builds his performance around these influences and stimuli, thus constructing an environment or world for his character to inhabit or perform in from the information provided and from his own workings and systems. On stage and screen, the external circumstances include the set and props and the other characters, which offer tactile, visual and sensory stimuli around which the actor can create *scenic faith*. The richer the environment, the richer, more convincing and more complete the *scenic faith* becomes. Furthermore, a symbiotic relationship appears to occur: the actor creates the environment, and the environment creates the character, which, in turn, augments the work of the actor in enriching the environment, and so on. This self-enhancing cycle fosters the *scenic faith* in the environment created.

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[1] In this dissertation I will use the male terminology for both genders.
[2] Konstantin Stanislavsky (1863–1938) was a Russian theatre director and actor who formulated an acting theory and practice now known as the system.

However, when working in film and television certain techniques are used that minimise or completely remove the external stimuli and given circumstances; this problematises the notion of *scenic faith* as proposed by Stanislavsky. What if the actor is not provided with the environment? Or what if the environment provided is not suited to the character that is to be portrayed? When *matte processing* or *green screen technology* is implemented during the filming process, the actor is confronted with the removal of these external influences or stimuli. This situation is further compounded in the filming process by the fragmentary nature of the shooting schedule, as well as the incompleteness of the setting that results from the necessary technical presence of camera, sound and the like. It is extremely difficult to construct *scenic faith* under these circumstances and thus the actor's performance may be compromised.[3] According to Lutterbie (2011:69), part of the actor's occupation involves circumventing the challenges that might arise and still responding in congruence with the diegetic world. This study is intended to assist the actor when faced with the challenges of the green screen.

According to Hanke and Yamazaki (2009:2), the effects filmmaker, Zach, from the Fox show *On the Lot* provides a clear definition of *green screen technology* when he stated "[g]reen screening is just basically telling the camera to replace anything it sees as green with whatever you [the director] want" (Zach quoted in Hanke & Yamazaki 2009:2; text in brackets added). This technology makes it possible to film actors in the green screen environment and then substitute the green with various environments that would otherwise have been impossible for the filmmaker to film. For science fiction films such as *Avatar* (Cameron 2009), *Clash of the Titans* (Leterrier 2010) and *Green Lantern* (Campbell 2011) and, in which otherworldly events[4] take place, for historical purposes in a film like *Sky Captain and the World of Tomorrow* (Conran 2004), for dramas set in Greece but shot in a studio, green screen technology is quickly becoming the norm in the film and television industry:[5]

It's getting even easier for television studios to create locations or

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[3] This study will only be concentrating on the use of green screen technology.
[4] Events not congruent with known reality, such as myths, supernatural and extraterrestrial phenomena.

backdrops thanks to green screen technology, and TV is taking as much (if not more) advantage of green screen as movies (TV's green screen revolution is here 2011:[sp]).

Leon van Nierop (1998:143), a film analyst and critic, states that special effects are dominating the film industry to the extent that actors need to *imagine* an occurrence, effect or character that is confronting them more frequently. As these characters and effects are only added or created after the actual filming with the actor takes place, they are thus not there to assist the actor in creating the reality necessary for the scene. Accordingly it can be said that green screen is one of the components incorporated by filmmakers to facilitate special effects.

However, the central challenge for the actor working with green screen is that there is no environment to inhabit, populate, react to, engage with or respond to. The entire world that is usually constructed around the actor/character on screen is missing and has been substituted by a green screen. In this seemingly arid world the actor has to create a world, and to do this he needs a specific performance strategy that takes into account a lack of the visual and sensory stimuli that usually occur in a green screen setting. Determining an effective strategy (and then developing a training process to bring the strategy into being) will be the cornerstone of this project.

Acting training systems (such as Stanislavsky's) presuppose that tangible and visual external stimuli exist in relation to the character's internal influences or stimuli. In my research so far, I have found only a few courses on training in green screen techniques that focus on the actor; that is, on assisting the actor to engage with non-existent external stimuli. These courses include the Green Screen & CGI Acting Technique for Directors and VFX Supervisors course presented by Teresa Grimsditch at the London Film School (Green Screen & CGI Acting Technique for Directors and VFX Supervisors with Teresa Grim ditch [sa]), as well as a green screen acting course presented by Teesside University in the United Kingdom (Watson 2010:[sp]). This indicates the need to focus more on the actor and his

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5 "[A] particular form or branch of economic or commercial activity" (*Oxford Online Dictionary* 2011).

strategies for green screen acting in the disciplines of both drama and film.

In order to find a solution to the challenges that face the actor when external stimuli are limited or absent, research into existing acting theories and practices applicable to the green screen challenge are needed. Since actors need to imagine these effects in creating the character's reality, imagination is a key component that needs to be researched. Fundamentally, strategies have to be developed that trigger the workings of the imagination in a fast-paced, complex, focused and rich way so that *scenic faith* can be established with minimum direct external stimuli and by eliminating the obstacles that impede the creative process. In this case the obstacles are specifically the absence of environment, the monochromatic and dominant (overwhelming) green screen and the need to create *scenic faith* on demand.

One acting theory that incorporates both the imagination and belief in the imagined objects is contained in the theories of Stanislavsky and particularly in his notion of the *magic if*. Stanislavsky (1967:430) posits that the *magic* or *creative if*[6] lets the actor believe in the imagined reality, circumstances or truth. This makes the *magic if* a key strategic component when working with a green screen. The *magic if*, as a strategy, operates in two domains. In the first instance it allows the actor to ask the following question: "What would I do if I found myself in this circumstance?" (Carnicke 2009:221). This question acts as the catalyst to "permit" the actor to enter the "fictional world" of the character, yet maintain the empathic relationship because the actor is also present in the fictional world. Secondly, because the answer to the question requires an action ("what would I *do* …?") or a series of actions, these actions allow the actor to locate, orientate and develop the environment through the process of actions (sequenced, directed, made dynamic and focused).

Recent studies conducted by Carnicke and Blair on Stanislavsky and his acting theories have revealed a link between Stanislavsky's teachings and discoveries made in neuroscience. According to Blair (2000:216), the principles used in the Method[7] are "grounded in basic human biology and sentience". Therefore neuroscience (that is to say, the science of brain function) could explain and

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[6] See chapter 3 for an in-depth exploration of Stanislavsky's *magic if*.
[7] The Method is based on Stanislavsky's theories, teachings and system.

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contribute to acting strategies and, as such, needs to be considered.

Selected concepts in neuroscience will be used in two ways in this study. In the first instance, I acknowledge that Stanislavsky was working without the benefit of a complex understanding of the relationship between the workings of the consciousness, the imagination and the creative impulse in theorising his notions of the *magic if* in the context of *scenic faith*. Although Stanislavsky's notions can now be verified through the use of neuroscience, he defined them by observing humans and drawing from his own life experiences. As such, his concepts are not always clearly defined and his descriptions are often vague.[8] Therefore, neuroscience can assist in justifying and refining (where necessary) the workings of the *magic if*. Secondly, the shortfalls or substantiations in Stanislavsky's theorisation of the *magic if,* as pointed out by the interrogation of his strategy through the lens of neuroscience, can potentially be addressed and aided by the strategies that neuroscience itself has in place. I will argue that an understanding of neuroscience concepts concerning the notion of imagination and imagery, and congruent with the principles of the *magic if,* could lead to an approach to acting and acting strategies that can assist the actor to deal with the central challenge around *scenic faith* that arises out of acting with a green screen.

1.2 PROBLEM STATEMENT

During green screen acting the actor is provided with minimal external influences or stimuli and may, thus, struggle to generate *scenic faith*. As very little information on, or acting strategies for, generating *scenic faith* with little or no external influences or stimuli exists, techniques and strategies to optimally access the *magic if* – to "believe" in and portray the imaginary external influences/stimuli and given circumstances of a scene appropriately – need to be developed.

The actor is confronted with the obstacle of no or minimal external impulses/stimuli during acting with green screen technology, thus compromising the actor's establishment of *scenic faith*. Consequently, the actor has to find a solution to

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[8] For examples see Stanislavsky's three seminal books: *An actor prepares* (1973), *Building a character* (1979) and *Creating a role* (1987).

circumvent this obstacle. One common notion in existing acting theories that can offer assistance in this regard is the well-known notion of the *magic if* that underpins all major acting theories. The *magic if* is a notion first theorised by Konstantin Stanislavsky. However, the *magic if,* as defined by Stanislavsky, assumes the existence of external impulses/stimuli and is not defined in sufficient detail to extrapolate and transpose key ideas of the *magic if* to an environment lacking in external stimuli/influences. Current developments in neuroscience provide more evidence, insight and strategies for understanding, clarifying and using the *magic if* in terms of imagery and imagination. This has already been mentioned by scholars such as Carnicke (2009) and Blair (2000; 2008), although there is definite scope for development in this area. For example, both these scholars approach the problem predominantly from an analytical position and do not venture into the training or practical aspects of acting in general. More specifically, they do not focus at all on green screen obstacles. This study will therefore build on the existing material and theories to establish the convergence between the *magic if* and neuroscience. Following this, the work will serve to devise a working model (in practice) for actors to circumvent the challenges that they will encounter when confronted with a green screen.

The following graphic presentation illustrates the model:
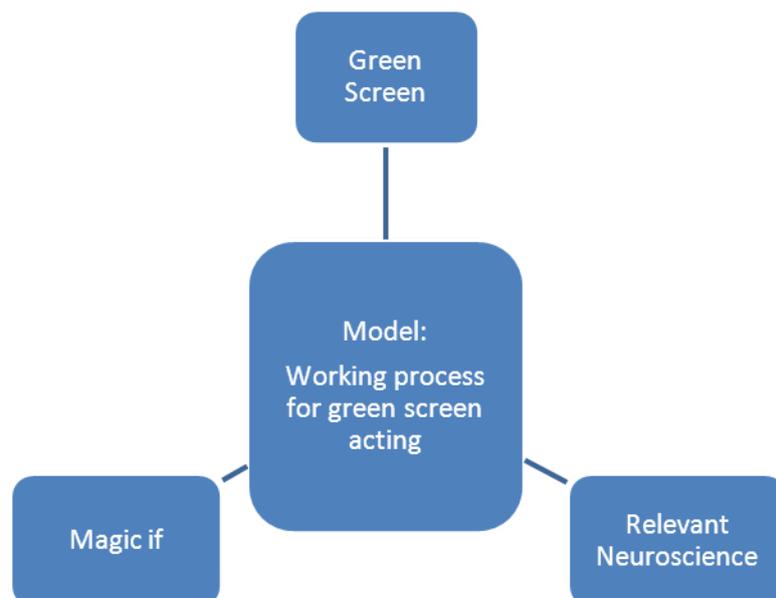
Figure 1.1: Schematic representation of the study

1.3 INVESTIGATIVE QUESTION

How can the actor develop *scenic faith* when working with green screen technology?

1.4 DISSERTATION STATEMENT

The use of the *magic if*, especially when underpinned and substantiated by the neuroscience concepts relating to imagery and the imagination, can circumvent the potential obstacles for the actor presented by the lack of external stimuli resulting from the green screen. Consequently, the process of the *magic if,* as grounded in current neuroscience information concerning the notion of imagination and imagery, can provide a strategy by means of which the actor can create a character congruent with the reality within the acting moment – thus generating *scenic faith*.

1.5 AIM OF THIS STUDY

The main aim of this study is to investigate to what extent the implementation of the *magic if*, informed and enhanced by current information on the brain's action and response to imagery, can potentially circumvent the challenges created by the green screen. The secondary aim of this study, based on a scholarly survey, is to provide a process and strategy for preparing the actor to work with green screen technology. In order to meet the aims of this study certain sub-aims were defined:

Sub-aim 1: To determine and describe the use of green screen technology with specific reference to the role of the actor.

Sub-aim 2: To ascertain the challenges that green screen acting may present to the actor in the acting moment.

Sub-aim 3: To document Konstantin Stanislavsky's system with specific reference to the concept of the *magic if*.

Sub-aim 4: To draw on current neuroscience knowledge with specific reference to imagination, imagery and the mind–body connection so that Stanislavsky's concept of the *magic if* can be underpinned and motivated.

Sub-aim 5: To use the insights gained from achieving the previous sub-aims to develop explorations and strategies for the actor who has to engage with a green

screen in the acting moment.

1.6 RESEARCH APPROACH

To interrogate the dissertation statement, an investigation into suitable techniques for circumventing the challenges created by the use of green screen technology in acting will be conducted using a qualitative research approach. The reason for applying this type of research is because acting is experienced subjectively and interpreted individually. Merriam (1999:11–13) states that qualitative research involves looking at the processes, meanings and understandings that people have constructed about/around a phenomena/experience through an exploratory and inductive process of investigation. The data is primarily collected and analysed by the researcher and the product of research is generally descriptive. Accordingly, a qualitative approach will assist me to locate the study against an appropriate theoretical background and to use various theoretical paradigms to describe, explain, explore and interpret a phenomenon – specifically in this case, acting with green screen technology. By reviewing the existing scholarship I will interpret source material to develop an acting strategy that is suitable for the green screen.

This research study will follow a qualitative research approach in line with the following action plan:

- A literature review will be carried out on the three main fields. This literature review will use information sources such as books, monographs, conference proceedings, reference material, journal articles, newspapers, magazines, reports, theses and dissertations (Mouton 2001:88). Owing to the character of this study further scholarly surveys will make use of films and DVDs. The anticipated critical integration of the knowledge, insights and shortfalls of the three separate fields is viewed by Mouton (2001:179) as being typical of literature reviews.

- Based on the insights gained from the literature reviews a model for explorations will be constructed. This will adhere to what Mouton (2001:176–178) refers to as model-building. In essence, constructing certain explorations for the actor, who

has to engage with green screen technology in the acting moment, will contribute to the development of the performance discipline in general and specifically to appropriate acting strategies for green screen.

1.5 CHAPTER OVERVIEW

1.7.1 Chapter 2: Green screen: the actor's challenge

The purpose of this chapter is to determine what green screen technology is and how it works. The chapter will explore and discuss the impact of green screen on the actor's work in film and television. The strategy to be followed in this research is primarily a review of published works and articles. It is foreseen that such a review will provide an understanding of the impact this technology may have in terms of limiting the actor's processes and influencing his ability to portray a character convincingly in such an environment. This will highlight the need for research on a strategy and/or training regime that focuses on acting with green screen technology.

1.7.2 Chapter 3: Stanislavsky and the *magic if*

The purpose of this chapter is to frame Konstantin Stanislavsky and his system and the way in which the implementation of the concept of the *magic if* can assist the actor in circumventing the challenges that may arise in green screen acting. The strategy to be followed will be a literature review of work relating to Stanislavsky and his system, specifically discussing the components of the *magic if*. This literature review is justified because it will enable an understanding of what the *magic if* is, as well as the nature of its components and its viability for use in green screen acting.

1.7.3 Chapter 4: A neuroscientific foundation for acting

The purpose of this chapter is to gain knowledge pertinent to the *magic if* from other disciplines such as cognitive neuroscience, imagery, and the psychophysical presence. It is foreseen that these fields could have a bearing on Stanislavsky's system and more specifically on the implementation of the *magic if*. The strategy to

be followed is to conduct a literature review on the developments in these fields and their implications for the *magic if*. The motivation for this review is to gain a better understanding of how the *magic if* can be accessed and to provide possible explorations and strategies to assist the actor specifically in green screen acting.

1.7.4 Chapter 5: Strategies and explorations for the circumvention of challenges the actor faces in the green screen environment

The purpose of this chapter is to design explorations and strategies that will assist the actor in circumventing the challenges created by green screen acting. The motivation for such an approach is the ever-growing technological environment that the actor finds himself in that is the film industry today. The chapter is divided into two sections: 1) strategy development, and 2) on-set strategy. The first section develops the components the actor needs to implement the *magic if*, while the second section implements a strategy for use by the actor when working in a green screen environment. These explorations and strategies will be substantiated by the way in which they adhere to the notion of the *magic if*, discoveries in cognitive neuroscience and the demands of green screen acting. By implementing these explorations and strategies it is hypothesised that the actor will circumvent the challenges posed by green screen acting by achieving *scenic faith* in the green screen environment.

1.7.5 Chapter 6: Conclusion

The purpose of this chapter is to conclude the research by discussing the findings. The chapter will discuss the contribution that this study makes to the field, the shortcomings of this research and possible topics raised by this research that could be investigated in the future.

CHAPTER 2
GREEN SCREEN: THE ACTOR'S CHALLENGE

2.1 INTRODUCTION

The purpose of this chapter is to determine what is meant by the term "green screen technology" and to demarcate it. In addition, this chapter will discuss the uses of green screen technology and address its influence on the actor's work in both film and television. The limited information available on the challenges that face the actor when working with the green screen, as discussed in chapter 1, motivates the overall study. The strategy to be followed is primarily a review of published works and articles. Moreover, owing to the limited information on acting with green screen technology, information available from behind-the-scenes footage of films using green screen technology will also be considered. Such a review provides an understanding of the challenges posed to the actor's processes and the influence such challenges have on his ability to portray a character that is congruent with the reality of the scene.

The idea that actors may be challenged by the technology and visual effects employed in a film is not an exclusively contemporary notion. The first known visual effect was a beheading in the short film *The Execution of Mary, Queen of Scots* directed by Alfred Clarke back in 1895 (Finance & Zwerman 2010:3); even then actors had to work with effects and the challenges they presented. This research addresses a gap in the existing scholarship as most literature on green screen and visual effects is written from a technical perspective in terms of how and where the filmmaker[9] can use it. Publications such as *The green screen handbook: real-world production techniques* (Foster 2010) and articles such as "Compositors piece together visual effects with character shots" (Robertson 2010) do not discuss green screen from the actor's point of view, but from the filmmaker's. Books on acting for film and television written from a technical angle, such as *Film acting: the techniques and history of acting for the camera* (O'Brien 1983), *Acting for camera* (Barr 1997) and *Screen acting* (Lovell & Krämer 1999), usually discuss the technique of acting

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[9] The filmmaker usually refers to the director and is the person who brings all aspects of filmmaking together (Tasker 2002a:1)

and how actors deal with the camera itself, rather than how the actor engages in his craft in the presence of green screen and compositing. This highlights the need for research, as well as the definition of a technique and/or training regime that will facilitate best practice green screen acting.

2.2 FILM TECHNOLOGY: VISUAL EFFECTS

As this chapter explores green screen technology, it is important to first locate the notion of technology. Wright and Smith (1989:8–10) posit that technology has to do with what humans construct to enhance their environment and the world they live in, while Dusek (2006:35) posits that technology not only involves machines, but also the living (which include organisations) and their skills. The *Oxford English Mini Dictionary* (2011c:571) defines technology broadly as "the application of scientific knowledge for practical purposes" as well as "machinery developed from this". It can thus be deduced that technology is the use of scientific knowledge by organisations to construct human components in order to improve a specific environment. In the realm of filmmaking, technology is used to improve the filmmaking process or environment. It can then be said that green screen technology or matte processing technology was developed to improve the filmmaking process or, more specifically, the visual effects in filmmaking.

From the earliest days of silent cinema, as exemplified by the work of the Lumiere brothers and George Méliès, many filmmakers have sought ways to combine reality (different images filmed at different times) and visual effects in order to create fantasy or a new reality (Foster 2010:3; Rickitt 2000:44). Although there are many philosophies on the nature of reality, for the purpose of this study reality is that which can be observed through the senses and which, in consensus, is known as fact in the physical world. This is in accordance with Earnshaw (2010:266–267), who agrees that reality is that which can be observed and experienced by most normal human beings. Earnshaw (2010:5) posits that realism is a truthful representation of the world and is connected with verisimilitude.

This "first reality" in the filmmaking process can be seen as any recorded live-action component. Through the combination of visual effects and reality, or live action, a

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new reality is created. The newly created reality or "second reality" is known as the diegetic world. This diegetic world is the film's story world (McClean 2007:11). This diegetic world suggests some sort of reality or authenticity, even when set in a fantasy or science fiction world. An example here is *Avatar* (Cameron 2009), a film that takes place in an alien world and therefore outside of our known reality. Even though this film is not a representation of our own world and reality it is still based on a reality and verisimilitude and makes us believe in the proposed diegetic world and reality. Visual effects have become an integral part of the process for the filmmaker to create the diegetic world.

According to Furniss (in Willis 2005:10), this notion is echoed by filmmaker John Witney, who said that the entire Hollywood industry has from the beginning of making films only been interested in trying to convince viewers of a forged cinematic reality and that the inventiveness of filmmakers is channelled into special effects. McClean (2007:6) states that most film histories will mention and emphasise the early use of special effects in film. Visual effects are so important to film that, according to Finance and Zwerman (2010:XV–XVI), they have become a global growth industry and can be seen as being the star of many films. According to Smolarek (2007:10) and McClean (2007:5), these visual effects are being used more regularly even in films not considered to be "visual effects" films; for example in the film *Forrest Gump* (Zemeckis 1994), the integration of historical and archival footage in the diegetic historical recreations (Willis 2005:13).

The elaborate use of visual effects is also true for television where more visual effects are seen in stories such as *Legend of the Seeker* (2008-2010), *Alphas* (2011–2013) and *Once Upon A Time* (2011–), as well as in "non-visual" effects programmes such as *Grey's Anatomy* (2005–), *Monk* (2002–2009) and *CSI: NY* (2004–). James Cameron, the director of special effects-driven films such as *Avatar* (2009), *Titanic* (1997) and *Terminator 2: Judgment Day* (1991) agrees that visual effects are used more frequently these days in any type of film, not just "visual effects" films (Duncan & Fitzpatrick 2010). Accordingly, visual effects can be present in any type or genre of film and are integral to the filmmaking process, so much so that they also form part of the preproduction and story development stages (McClean 2007:9). In the film *Star Wars: Episode One – The Phantom Menace* (Lucas 1999),

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1 900 out of the 2 000 shots were digitally altered or created (Rickitt 2000:187), which illustrates the ubiquity of visual effects in contemporary film. The regular use and importance of visual effects in film and television highlight the need for training the actor in negotiating the realities as performer to suit the demands of the often computer-generated moving image.

2.2.1 A brief chronicle of film technology and effects

This section provides a brief chronicle of visual effects in film in order to introduce and contextualise the use of green screen technology. Specific reference is made to double exposure, painted glass mattes, miniatures, rear screen projection, and front screen projection. These effects all present their own challenges for the actor.

i. Double exposure

According to Rickitt (2000:12), George Méliès (1861–1938) pioneered the use of visual effects in film. One of Méliès' enduring techniques that would later be adopted by filmmaker Edwin S Porter for his Western *The Great Train Robbery* (1903) is the double-exposure technique (Rickitt 2000:15). As an in-camera compositing technique, this procedure worked by covering part of the film during the first exposure and then adjusting the covering to just conceal the previous exposed film while filming a second time, allowing the previously unexposed parts of the film to be exposed (Rickitt 2000:13). This allowed two separate filmed components to be composited together. Méliès implemented this technique during his direction of the film *Indian Rubber Head* (1902), in which Méliès himself portrays a scientist who pumps up a replica of his own head on a table, which in the end explodes because of the overzealous assistant (Rickitt 2000:13). Rickitt (2000:13) explains that the replica of the head was indeed filmed a second time, exposing the film that was masked during the first exposure. Whether this technique was used for the purpose of deception (as applied by Méliès) or to promote the narrative (as applied by Porter) (Rickitt 2000:15), the actor involved had to react to components not seen by him but by the audience, components filmed separately, and therefore had to use his imagination in a new way to obtain *scenic faith*.

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ii. Painted glass matte

The glass shot (glass matte paintings) was developed by Norman O Dawn (Rickitt 2000:17). This is a matte painting on glass that is placed vertically at a certain distance from the camera in order to replace, add to or exaggerate the scene seen through the lens (Imes 1984:102). It is thus used as an in-camera composite (Woody 2007:156). According to Imes (1984:103), actors had to be fully rehearsed when using this technique to make sure they knew where to move so as not to suddenly vanish past the painted glass area. This not only challenged the actor physically but also mentally, as he had to imagine what was part of the painted glass.

iii. Miniatures

Imes (1984:104) states that the foreground miniature is a three-dimensional model built with complete detail in order to add, replace or mask certain areas in the view of the camera. It is used in a similar manner to painted glass matte. The miniature is placed in front of the camera at a distance that ensures that the miniature and live action will be in focus (Imes 1984:104). In the film *Ben Hur: A Tale of Christ* (Niblo 1925), a foreground miniature was used to complete the arena that the actors were looking at. It is important that the actors know where they are in relation to the miniature, so that they can use their imagination to be congruent with the new scene created by the camera lens. They also have to be careful not to disappear behind the miniature, unless it is built for that purpose. Accordingly, actors had to create *scenic faith* for themselves within an environment that differed from the one occupied in front to the camera.

In addition to foreground miniatures, early films were often populated by miniature characters. According to Pinteau (2004:37), Ray Harryhausen invented Dynamation by means of which miniature creatures and models are built and composited with live action. Working on the principle of double exposure, the live action and miniatures are composited together (Rickitt 2000:157). This technique was used in many of the films in which Ray Harryhausen collaborated, such as the skeleton fight scene in the 1963 film *Jason and the Argonauts* by Don Chaffey (Pinteau 2004:37; Rickitt 2000:158) and the final monster in the 1981 Desmond Davis film *Clash of the Titans*

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(Rickitt 2000:158). The actors had to react convincingly to the miniature creatures or characters without them being on set and therefore again had to work with components that were not present.

iv. Rear screen projection

Rear screen projection combines live action (occurring in front of a translucent screen) and a studio-shot image or scene (projected onto the rear of the screen) simultaneously to create a single composite (Imes 1984:120). This technique was developed as a result of the advent of sound in films, when location shoots included unwanted sounds that were problematic and rear projection filming could take place in a sound controlled studio environment (Rickitt 2000:21). According to Rickitt (2000:21) this technique was used in most Hollywood films in the 1930s, serving as background for travelling scenes or far-off destinations (Pinteau 2004:32).

Rear projection could also be used to project an already captured performance in a matte painting as was done in *Cliffhanger* (Harlin 1993) when Sylvester Stallone's character was filmed climbing a small rocky area and then projected onto a large matte painting of a huge mountain (Rickitt 2000:195). The live action or actors that form either part of the foreground or part of the projected image need to see and work with these images beforehand to be able to know when what actions are to be performed. The ability of the actor to create *scenic faith* in this context depends on his ability to imagine himself into the projected or composited world.

v. Front-screen projection

This technique involves the projection of the background images onto the front of a reflective screen, which is still placed behind the live action or foreground subject (Imes 1984:131). Imes (1984:131) states that the reflective screen produces brighter and better quality backgrounds to those of the rear-screen projection. This technique was used in the film *Superman* (Donner 1978) along with Zoran Perisic's Zoptic process which allowed for simultaneous counter zoom on actor Christopher Reeves and the projected background which made Superman appear to fly away from the background (Pinteau 2004:65). As with the rear screen projection the actor needs to

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create *scenic faith* by imagining himself in the environment and not be a subject separated from the background image.

While all of the above techniques have made way for the use of green and blue[10] screen processes that allow for computer-generated (CG) environments and three-dimensional backdrops (Keane 2007:62), they have also introduced acting challenges that actors have to contend with, the nature of which are located in the technology and the visual effects. The forced movement allocated to the actor, the lack of environment and the extensive use of imagination are all challenges facing actors in this technological film world. These examples underline the importance of developing a process for the actor in working in a visual effects environment, as history suggests that the actor will, for the foreseeable future, have to work in such an environment.

2.2.2 The uses of green screen technology

The question arises as to why filmmakers would use green screen and limit the external stimuli available to actors. In *Science of the movies* (2009c), Mark Driscoll explains that the television and film industry wants to put actors in different environments. When these environments pose health risks or are just too expensive in terms of cast and crew transportation, green screen is used and CG environments created (*Science of the movies* 2009c). Deciding on when to use green screen technology depends on practicality for the filmmaker. In the film *Avatar* (Cameron 2009), a rain forest set was built only for the filmmaker to realise that it was better to film the realistic components in front of a green screen and then digitally add the depth of the rain forest (Duncan & Fitzpatrick 2010:192). On a related note, entire environments were virtually created for the fantasy *Oz the great and powerful* (Raimi 2013).

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[10] In *Film Riot* (2010) presenter Ryan Connelly concurs that the only difference between the two colours depend on what colour is replaced, for example if the actors are wearing green, then the filmmaker should go with a blue screen - otherwise the clothes will be replaced. Larry Fong, director of photography for the film *300* explains that they used primarily blue screen, because tests showed that the green screen and the red capes of the Spartans formed a "…weird color fringing…" (Williams 2007:62). Even though blue or green screen are used under different circumstances, for the purpose of this study the terms will be used interchangeably.

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Clearly, another reason for using green screen is that whole virtual worlds can be created and actors can be transferred from green screen to the digital environment. This multiplies the variety of stories that can be told and places that can be shown. Finance and Zwerman (2010:153) state that a green screen is always kept on hand by many productions as a standby and can be used when needed for various reasons. This allows the filmmaker to film actors at any time and then change the environment; however, it also necessitates actor training that accommodates creative decisions at short notice.

2.3 VISUAL EFFECTS AND THE ACTOR

It is important for the actor to understand the significance of working in congruence with visual-effect techniques. The main goal of the visual effects team is to support the vision of the filmmaker through visual effects (Finance & Zwerman 2010:37), while the actor attempts to accomplish the same through his acting. Primarily, visual effects create photorealism in order to establish and maintain the diegetic world (McClean 2007:36). Barker and Austin (2000:171) posit that special effects not only have to convincingly depict the diegetic world or "realistic fictional world", but also need to be narratively cohesive in order for the spectators to have faith in them and through this faith be able to identify and narratively align with the characters and their predicaments.

This argument highlights the significance of the way special effects and characters need to establish this diegetic or realistic fictional world together. In Shilo T McClean's book *Digital storytelling: the narrative power of visual effects in film* (2007), a continuous theme throughout is the way digital visual effects serve the narrative, whether as spectacle or as being diegetically invisible.

In *Science of the movies* (2009b), visual FX supervisor William Mesa speaks about real or invisible visual effects. These effects are of such a nature that the viewer will not know they are an effect. These "special effects are so technologically advanced that very often we are unaware of their use in a movie" (O'Brien, 1983:183). McClean (2007:77) argues that invisible effects are changing or adding to the diegetic world without it being disrupted and that they should be entirely unnoticeable

(McClean 2007:78). These 'realistic' synthetic realities created by digital visual effects artists are not just conceited observations made by the artists themselves (McClean 2007:56); for example, in the film *The Day the Earth stood Still* (Derrickson 2008), there is a scene where a few helicopters drop off military units. These helicopters are computer-generated images (CGI) and are not based on an object that is captured on film a priori (*Sciences of the Movies* 2009), but are seen as real by the audience since their construction often corresponds with objects that exist outside of the film on an iconographic level.

Another example can be taken from the space adventure *Apollo 13* (Howard 1995). Not only could the visual effects artists not distinguish between the forged and the real footage, but even the astronauts were uncertain as to the origins of the footage (McClean 2007:70). Spectacular effects are meant to be seen by the spectator to inspire awe or to shock, while invisible effects must, as the name suggests, remain unseen.

According to McClean (2007:93), if audiences are convinced by the digital visual effects and the diegetic world is perceived as real, then disbelief can be postponed and the narrative can dictate. This belief in the diegetic world can only be achieved if the actor is convinced of the circumstances (often visual effects) around him. If there is no congruency between the actor and the visual effects, both the diegetic world and the narrative will fall apart and break the (photo)realism of the effects. An example of the lack of congruency is given by Keane (2007:74), who writes how the CG character of Gollum in *The Lord of the Rings: The Two Towers* (Jackson 2002) seems weightless in a scuffle between the characters of Gollum and Sam (an actor) and this shows that the CG character has not been effectively integrated into the film. Here the congruence of the actor and the CG character was at fault. McClean (2007:83–85) writes about how, with visual effects, the situation the hero finds himself in can be taken beyond physical realism, although the scene still has to be perceptually real. Therefore, even when visual effects do go beyond physical realism, as happens in *Sucker Punch* (Snyder 2011), perceptually diegetic realism can still be obtained if the actor works in congruence with the visual effects.

McClean (2007:36) argues that although events can be out of the ordinary, it is the

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characters themselves that must be convincingly real. In the documentary *The Story of Computer Graphics* (Foster 1999), Richard Taylor, CG member on the film *Tron* (Lisberger 1982), observed that a film is about the story and not the visual presentation. In the same documentary, Abel, another contributor to *Tron* (Lisberger 1982), acknowledges that it is the story and its characters that will ultimately make or break the film. This highlights the importance of actors learning to understand and work with visual effects, to know how green screen is used within the discipline and to successfully navigate the challenges such a scene presents. The actor works towards *scenic faith* and therefore must also serve the narrative of the diegetic world to maintain the believability or constructed authenticity of the film. The actor and the visual effects need to work in congruence to uphold the narrative and create perceptual realism. The intent must be to preserve and maintain both the story and verisimilitude (McClean 2007:77–78).

The following section aims to contextualise, historicise and explain key processes and ideas related to green screen technology in order to illustrate the nature of the challenges the actor is presented with.

2.3.1 Digital visual effects: contemporary challenges for the actor

McClean (2007:5–6) argues that visual effects incorporate a variety of film techniques which include "[p]yrotechnical effects, mechanical effects, matte paintings, glass mattes, rear projection, miniatures, models, prosthetics, make-up, specialized props". However, Finance and Zwerman (2010:3) provide the following definition of the term: "*A visual effect is the manipulation of moving images by photographic or digital means that creates a photorealistic cinematic illusion that does not exist in the real world*" [emphasis in original].

With reference to "digital means", Manovich (2002:9) argues that the "computerization of culture" redefined cinema. It allowed for all media, whether produced on a computer or converted from other sources, to be made up of digital code which consists of the numbers 1 and 0. This digital code and technology are important in film and television as they allow for control over the quality and re-production of the image (Rickitt 2000:73). New media, such as CGIs, are already in

binary code or represented by numbers, while other media like film can be converted to binary code or digitised (Manovich 2002:28). Wright (2002:300) explains that a CGI is an image, painting or animation completely created by the computer. In elaboration, Manovich (2002:25–26) states that all existing media are digitised, making the computer a "media synthesizer and manipulator", meaning that the computer can change the digitised media by combining, adding, removing and manipulating components in multiple ways. The digitisation of media makes algorithmic manipulations on the media possible and they become programmable and therefore changeable (Manovich 2002:27).

Digital effects are achieved by working with digital processes which, in turn, work "through intricate sequences and seeming endless combinations of binary code" (Keane 2007:36). These digital processes are is important to the visual effects world as it is, as quoted above, "the manipulation of moving images". It is the capability of digital technology to forge and manipulate "the perceived reality of the photographic image" (Keane 2007:44) that makes the use of digital visual effects important in film and television and which has normalised the use of CGI in cinematic effects (Keane 2007:61). The actor, constituting a part of the live-action footage, will also, after digitisation, be another graphic consisting of binary code and therefore the same as manually produced images on the computer (Manovich 2002:300). This will allow for the actor's performance or appearance to be manipulated through algorithmic calculations within the manipulated result, as he forms part of the image. With digital visual effects, the range of special effects processes and techniques has expanded (McClean 2007:44), allowing digital technology to replace most conventional or analogue film technology (Manovich 2002:300).

Part of digital technology's advances in the area of visual effects has to do with its ability to manipulate the moving image, thereby providing filmmakers with the opportunity to make use of digital compositing. According to Brinkmann (2008:2), digital compositing in visual effects works with pre-existing images, then forms or creates new images by changing and merging the pre-existing images. Digital compositing is where images are combined to form a new image, with the goal being to make it look like one 'original' image. Indeed, Wright (2002:1) and Rickitt (2000:61) confirm that the vital creative aim and success of digital compositing or

compositing in general is to combine these different images and components as if they had been shot simultaneously with one camera under the same circumstances. The goal is to achieve photorealism; that is, to create a computer image that is indistinguishable from a photograph (Manovich 2002:199). Brinkmann (2008:2) gives the following unequivocal definition for digital compositing: "The digitally manipulated combination of at least two source images to produce an integrated result." Keane (2007:71) states that compositing denotes a couple of processes that replace, manipulate and improve an actor's already captured performance.

According to Robertson (2010:A1), some composites regularly consist of a 100 layers or more.[11] This illustrates how many unknown components can be added after an actor's performance has already been captured. When the composition is finished it will become a single image or "stream" where the layers or components are no longer separate (Manovich 2002:139). According to Carnicke (1999:77), the actor needs to be prepared for these unknown components because "[t]he screen actor must often pull from the air on command … reactions to other characters or to special effects that will be added in post-production". Therefore, compositing has a direct effect on the end result of an actor's performance which allows filmmakers to add and/or combine real-life actors with various components, different footage, matte paintings, CG environments, CG characters or anything they can come up with into the picture frame. I will now discuss this briefly.

i. Footage

Live-action scenes shot separately can be combined to form a new reality within the diegetic world of the film. This combination can include complete scenes with movement or stationary shots. In the film *Planet Terror* (Rodriguez 2007), an exploding truck is filmed and then, separately on the same location, actress Rose McGowen is filmed while rolling away from nothing, the footage is then combined to create the diegetic reality of the character rolling away from an exploding truck. This combination of footage poses a challenge to the actor in terms of reacting to the

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[11] Colin Strause, co-owner of visual effects company Hydraulx, states in *Science of the movies* (2009a) that they build composites consisting of hundreds of layers. Finance and Zwerman (2010:16–17) argue that the filmmaker can combine an almost limitless number of layers or components, but

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components that are shot separately as if they were shot simultaneously. In this example, Rose McGowen had to roll as if she were in real danger from an exploding truck.

ii. Matte painting

Wright (2002:307) and Rickitt (2000:189) explain a matte painting as a painting used in conjunction with live-action footage, usually in the background, which is often made to appear photorealistic. Imes (1984:103) explains how, when using matte paintings, only a part of the set needs to be built, because the artist can paint that which is needed into the set. In other words, any extra scenery that is needed is painted and composited into the live action footage, either while filming takes place or in postproduction. This allows the filmmaker to create intricate worlds and scenes (Woody 2007:155) and add intricacy to a scene that would otherwise have been impossible or too costly to shoot (Finance & Zwerman 2010:8). An example is the closing shot in *Raiders of the Lost Ark* (Spielberg 1981) where the old man is packing away the crate containing the Ark of the Covenant in a huge warehouse containing seemingly millions of other crates; only a small portion is live action while the rest is a matte painting by Michael Pangrazio (Rickitt 2000:202).

Matte paintings are therefore a separate component that the actor has to imagine while shooting and are a good example of the challenges the actor has to face as presented in this study. Subsequently, computers have changed the art from traditional matte paintings to digital matte paintings (Rickitt 2000:203), which are now 'painted' by the computer using specially developed paint or imaging software (Rickitt 2000:204). At present most matte paintings are done digitally as 3D CG art and are also referred to as created 3D environments (Finance & Zwerman 2010:9). These 3D environments can be developed into an entire virtual set.

In section 2.3.2, I will discuss the contemporary intersections between matte processing and green screen technology.

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that the more you include the more costly and complicated the images become.

iii. CG environment or virtual set

Rickitt (2000:207) states that 3D environments are used to enhance the real environments in live action. Keane (2007:157) states that a virtual set is a film set that is partly or entirely made of green screen in order to substitute the green screen in postproduction with CG environments. This CG environment is usually created to come across as photorealistic, even though it may be a fictional environment (Finance & Zwerman 2010:22). There are exceptions to these photorealistic CG environments, for example *Space Jam* (Pytka 1996), where Michael Jordan portrays a real-life character in a cartoon world. Finance and Zwerman (2010:26) posit that when a virtual set or "digital back lot" has been created it can easily be adapted for different projects by changing the lighting or "set dressing". It therefore, in essence, takes over from the old studio lots that were reused. Such virtual sets allow the filmmaker to plan and set-up shots and scenes (Keane 2007:158).

These additional benefits of virtual sets make the use of green screen even more popular. Increasingly, 3D digital environments allow the filmmaker to use a virtual camera which can move with comparative ease through this environment (Finance & Zwerman 2010:9). The virtual camera is a valuable addition as it can simulate real camera moves within the virtual environment, without physical limitations (McClean 2007:46–47). Virtual cinematography comprises basically the 'filming' of a virtual world where the virtual set and virtual characters can mix with or take over from live-action footage (Keane 2007:157). This allows the filmmaker to create imaginative and complicated shots digitally that can be blended or transitioned into the live action (McClean 2007:49). Rickitt (2000:180–182, 207–208) states that where the live action and the virtual world need to blend, it is crucial for the virtual camera and live-action camera to be in sync in order for the same movements for the two worlds to be seamlessly combined. The actor has to imagine this CG world even before the composite is done in order to truly 'believe' in the circumstances and to create a character that is congruent with this CG environment. Another CG component that can be added and blended in live-action footage is that of a CG character.

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iv. CG Characters

CG characters can be either completely digitally created or created by motion capture. Motion capture is a process in which an actor's physical performance is recorded as data and converted to form the basis of a CG character's performance (McClean 2007:58). The data is recorded by a computer when cameras identify the movement of markers placed on the actor (Finanace & Zwerman 2010:63). CG characters can be integrated into the diegetic world in the same way as the CG environment, which means the actor has to deal with an ostensibly tangible and haptically present character that is not physically present when the performance is captured.

The actor needs to work to the best of his ability with visual effects, even though digital visual effects and compositing can change or alter his performance afterwards. In *Star Wars: Episode One – The Phantom Menace* (Lucas 1999), most live-action filming took place in front of a green screen; alterations were made afterwards. Scenes were digitally altered to reposition actors, new dialogue mouth shots were filmed and composited onto the existing mouths, and new scenes were generated by manipulating and compositing various performances from other scenes and backgrounds (Rickitt 2000:187). The actor cannot control the various processes his captured performance will go through after filming, but he can achieve control over his performance on the day of filming.

Many components are not on location when an actor shoots his scenes and he needs to understand how to navigate these components and how this affects him as a performer. Knowing more of how this navigation between the physical and virtual works can be vital to the actor's processes in achieving *scenic faith*, which, as discussed in chapter 1, is what Stanislavsky called the actor's ability to believe in the circumstances he is provided with in a scene (Vakhtangov 1983:141). Digital compositing is done by creating mattes of the different components that will be composited together and green screen is used to create a clean matte of real-life actors and their actions.

2.3.2 Integrated technologies: matte processing and green screen technology

Although compositing is a visual effect, the use of green screen technology is not an effect on its own, but rather a facilitator of the visual effect of compositing. Thus, all green screen and matte processing are directly involved in compositing. As has been discussed, green screen works with digital compositing in computers, which is the machinery developed using the scientific knowledge of binary code. In this light, the scientific knowledge directly involved in green screen is that of matte processing. When different images need to be composited together in visual effects matte work is an important process (Imes 1984:102). This is possibly the technique that is currently most in use (Finance & Zwerman 2010:16). Wright (2002:307) establishes a matte as "a **one-channel image** used to define the transparent regions of the foreground and background elements of a composite" [emphasis in original]. The matte is used to recognise which region is the background layer and which region is the foreground layer (Wright 2002:73).

The travelling matte has been integral to visual effects since 1920 (Rickitt 2000:45). It is a matte that travels or moves from frame to frame together with the film images (Foster 2010:12) or moves to match the subject's movements across the frames (Imes 1984:110). Various travelling matte processes have been developed through the years, including the sodium vapour technique and the blue-screen colour separation process (Rickitt 2000:51), but it is Petro Vlahos's version of the "*Color Difference Travelling Matte System*" [emphasis added] (Foster 2010:10) on which subsequent green screen technology has been based. The colour difference matte is acquired by using the value difference between the background colour (green screen) and the other two colour records – red and blue (Wright 2002:300).

With the advent of digital technology and the computer, creating a matte became a much less strenuous affair. Rickitt (2000:78) states that generating a matte is now automated by using programmed software for specific imaging needs. The ease with which filmmakers can composite and replace components in an image is reiterated by Martinez (2010) when he explains that computer animation has advanced so much that it is no revelation that green screen technology is now a feature in many films. With the hardware and software technology available, the process of creating a

travelling matte is quick and does not require copying of the film or the images (Foster 2010:12). There are a few variations on the way in which the modern process is done, but this explanation by Jeff Foster (2010:13) frames the concept:

> The blue or green screen production process is primarily made up of three elements: the foreground subject, the colored screen background, and the target background that the subject is composited into … the matte is generated from the background color on original film or digital video footage and composited digitally through hardware or a software application…

Foster (2010:3) further states that this "travelling matte process uses a sophisticated series of elements that allow you to make complex extractions and composites". These extractions are usually where the green screen comes in. This matting process is also sometimes referred to as keying, because according to Wright (2002:306) the term for a matte in video is a key. The actor is filmed and everything that needs to be replaced with other images or objects is covered with green screen. A matte is then digitally pulled by instructing the software to identify the colour (the green) to be removed. When the mattes of the actors and different components have been created, they can be combined one by one in the computer to create a new image for the diegetic world (Rickitt 2000:80). Rickitt (2000:83) explains that when movement is involved in a composition, tracking is used to record the movement of objects, then any additional component will be harmonised with that movement to bring congruence to the composited shot. In *Science of the movies* (2009a), Colin Strause reiterates that if the filmmaker use green screen, he can replace that colour with something else. The 'greener' the set the more it challenges the actor's processes and imagination, because the external stimuli which the actor uses to become congruent with the reality of the scene are minimal. This challenge has to be circumvented by a technique for preparing the actor for working in a green screen environment such as those discussed below.

2.3.3 Different uses of green screen

Green screen can be used in the following ways:

i. Digital set extension

Green screens are usually used within existing set pieces (Woody 2007:146), as a backdrop to fill in the background, as executed in the HBO show *John Adams* (Hooper 2008). This series takes place in the eighteenth century and matte paintings are used to illustrate the time and architecture of the buildings and ships (Foster 2010:105). In the show *John* Adams (Hooper 2008), green screen was used in conjunction with real scenery or set extensions and therefore only filled in the scenery. Thus, most of the green screens were placed at the back or placed strategically (Foster 2010:105–108):

Photo 1: Green screen as backdrop – *John Adams* (Hooper 2008).

In the film *300* (2006), directed by Zack Snyder, the filmmaker primarily used blue screen for its expansive shots. In the documentary *The Making of 300* (2007), the director explains that they wanted every environment to be an environment of the imagination, every landscape, battle, action and architecture were created entities – hence the reason for employing so much blue screen. Williams (2007:53) states that *300* (Snyder 2006) made "elaborate use of digitally treated images and computer-generated (CG) background". They did, however, have set extensions to "keep our orientations and help the actors" (Williams 2007:55).

In *The Day the Earth Stood Still* (Derrickson 2008), the green screen was used to fill or be laid over the front screen of a helicopter to allow the compositor to change all components outside, which included another helicopter crashing into the one with the actors in it (*Science of the movies* 2009b). Here the pilots had to act as if they

were experiencing this helicopter crashing into them. Although the real investment of this study is in prolonged green screen acting, it is also important to consider fast scenes involving green screen. The scene with the helicopter crashing into the characters might happen quickly, but it is still important for the actors in the scene to achieve *scenic faith* and create congruency.

The success of a scene, as has been discussed, rests on the actor working with the visual effects and achieving *scenic faith*. In this scene the *scenic faith* will create more believable fear than just a simulated jerk reaction. In *Cloverfield* (Reeves 2008), a film about an alien destroying New York, Eric Leven, the visual effects supervisor states that many "shots were filmed against green screens that required large set extensions" (Moltenbrey 2008:47). He explains that a green screen lot was used in filming the evacuation scene, even though audiences will believe it was shot in New York City.

ii. Virtual set construction

Cameron states that physical sets are "becoming a thing of the past", as has been shown by films such as *300* (Snyder 2006) and *Sin City* (Rodrigues & Tarantino 2005) (Duncan & Fitzpatrick 2010231). In *The Day the Earth Stood Still* (Derrickson 2008), a sci-fi film about an alien force destroying the human race, green screen was used in this way. *Science of the movies* (2009b) explains that when Keanu Reeves's character makes two helicopters malfunction and crash into each other, just him and the green screen were filmed. While both the helicopters and Keanu Reeves are in the same frame, he was filmed standing in front of a green screen while the helicopters crashing and the background were composited in later (*Science of the movies* 2009b). Keanu Reeves had to imagine this scene of wreckage unfolding in front of him and that he was controlling it.

Green screen is also used when virtual sets and live action are composited together. Here the filmmaker can have his actor in a completely green room, where almost everything is covered in green. In the television show *Ugly Betty* (2006–2010), green screen technology was also used occasionally in various ways, one of which was by having the actors completely surrounded by green.

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Photo 2: Green screen and the virtual set. America Ferrera in *Ugly Betty* (2006–2010) (Still by author taken from Stargate Studios Virtual Backlot Reel 2009)

Avatar: the filmmaking future is now (2010:2) recounts how, in *Avatar* (Cameron 2009), more than 3 000 visual effects shots were used and that "[e]ntire virtual worlds had to be created". It also reveals that it was a time-consuming process to film the actors in front of a green screen and "subsequently meshing their actions seamlessly into the 3D virtual worlds" (Avatar: the filmmaking future is now 2010:2). Rickitt (2000:299) posits that computer environments and the use of green screen could replace physical sets and locations altogether.

iii. Body cover

Green screen can be used to cover any part of the body the director wants to erase from the shot or to replace it with something else. Although the green screen becomes part of the actors on set, the actors wearing it or observing it will have to imagine in detail the components that will replace the green and navigate the challenge of the green screen being used in this way. In the film *Planet Terror* (Rodriguez 2007), the character Cherry Darling played by actress Rose McGowen has a semi-automatic in place of her right leg. The director Robert Rodriguez placed a cast (either green or grey) around her right leg so as to be able to replace her leg with whatever he wanted (The 10 Minute Film School: Planet Terror [sa]). The cast not only ensured that the leg could be replaced, but it kept her knee straight to ensure congruence with the reality of the film (The 10 Minute Film School: Planet Terror [sa]). *Scenic faith* is crucial here in that the actress had to believe there was a semi-automatic where her leg should be; she had to imagine the weight of the semi-

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automatic (not of the cast), the feel, how it would affect her walk and how it would influence her body while the film was being shot.

Photo 3: Body replacement. Rose McGowen in *Planet Terror* (Rodriguez 2007). (Still by author taken from The 10 Minute Film School: Planet Terror [sa]).

In *Hollow Man* (Verhoeven 2000), actor Kevin Bacon had to wear body cover so that he could be erased in order to simulate invisibility (Pinteau 2004:127). In *The One* (Wong 2001), a stuntman wore a green mask in order to replace his face with that of the lead actor Jet Li (Pinteau 2004:128). This same technique can be used to replace or create an entire outfit for a character as was done in the film *Alice in Wonderland* (Burton 2010), where actor Crispin Glover was completely covered in his role as Stayne, Knave of Hearts (Alice in Wonderland – Behind the scenes [Part2] [sa]).

Photo 4: Green screen wardrobe. Crispin Glover, Johnny Depp and unknown actor in *Alice in Wonderland* (Burton 2010). (Still by author taken from Alice in Wonderland: Behind the scenes [Part 2] [sa]).

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Here the actor had to imagine what he was wearing and how the clothes might impede him or make him move faster. His actions had to assimilate the end manipulation of what the director would eventually have him wear. Green screen can also be used to cover the entire body so as to be able to insert virtual or other types of characters. This was also done in the film *Alice in Wonderland* (Burton 2010), as can be seen in the photograph above where one person is completely covered in green to be replaced later by a CG character. Helena Bonham Carter, who portrays the Red Queen in the film, recalls that she had to act with many green people and many actors were in green leotards reading for other characters (Alice in Wonderland: Behind the Green Screen – [Part 2] [sa]).

In *Avatar* (Cameron 2009) when the native character Neytiri meets the true human form of Jake for the first time, the director had to film the scene not only with the two actors, but also separately with just the actor playing Jake and people covered completely in green to be replaced later by the digital character of Neytiri (Duncan & Fitzpatrick 2010:227). Although people are covered by the green screen, the actor still needs to use his imagination and create *scenic faith* in 'believing' that these green characters are actually different beings with emotions and expressions that are interacting with the person in the diegetic world.
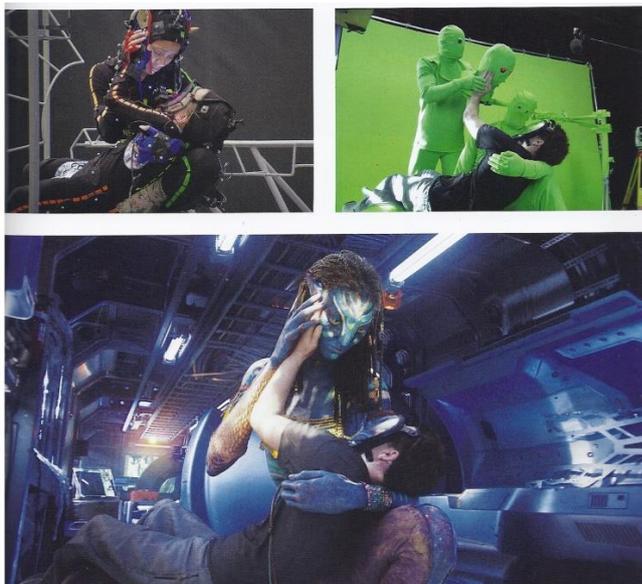

Photo 5: Green screen as a character. Sam Worthington and Zoe Saldana in *Avatar* (Cameron 2009; Duncan & Fitzpatrick 2010:227).

These examples underscore the extensive use of green screen and the need for an actor to develop a technique for working with it.

Chapter 3 will explain how *scenic faith* can be obtained in relation to acting in green screen environments and with virtual sets and characters. First, though, it is necessary to point out the challenges green screen technology poses for the actor.

2.4 TOWARDS GREEN SCREEN ACTING

Rickitt (2000:288) posits that the future of special and visual effects will focus more on the way they are presented to the public and less on how they are created. This is as a result of the few boundaries that remain in image creation and compositing, which will only be refined (Rickitt 2000:288). Wolf (1995:53) argues thus:

> But perhaps the most affected are the actors appearing in the film. Besides concentrating on the scene at hand, they must appear to interact with nonexistent objects or characters, moving through designated areas and reacting with precise timing.

Actors face particular challenges with green screen, since there is no outside stimulation or components to react to and they still have to portray the characters 'as if' the characters were in the proposed circumstances. Martinez (2010) states that the actors who worked on *Alice in Wonderland* described it as isolating, probably because the majority of it was filmed in front of a green screen. This is a challenge to the actor, since the circumstances he has to believe in to achieve *scenic faith* have been made minimal or even taken away completely. Matt Lucas who portrays Tweedledee and Tweedledum in the film, said "[s]o much of what you see has been added afterwards, we shot this film basically in a big green room, no set, very few props" (*Through the Looking Glass: The Tech behind Alice* 2010). The actor needs to be able to envision himself in any situation or environment, even though all he sees is green.

The filmmaker can assist the actor in his efforts to not only 'believe' in the character,

but also to 'believe' in the imaginary circumstances demanded by the storyline. Wolf (1995:53) argues that when actors and green screen are used together, the actors are reliant on the filmmaker and his prompts. The filmmaker needs to make sure the actor understands what he is envisioning and what the setting is going to look like. The more the filmmaker can share this vision with the actor, the more prepared the actor will be to create a character in the envisioned environment. Before the digital advances in special effects, film acting writer O'Brien (1983:183) maintained that what will happen, when it will happen, where actors should remain and on which cues must be communicated precisely to the actors. These prompts will create a visual link for the actor 'as if' he were in the proposed circumstances.

Melink Thompson-Godoy, visual effects supervisor at Look Effects Inc., states that actors are working with a component that is not there; therefore they have to be prepared and know their environment; for example that this is where a missile is going to be and that the actor cannot walk through it (*Science of the movies* 2009c). Christian Cardona, digital supervisor, agrees and believes the actor needs a reference to understand where things are so that "when we composite you into an actual shot, it looks like you are interacting, it looks like you are living in that space" (*Science of the movies* 2009c). This reference can be physical while shooting or a visual reference before shooting.

Woody (2007:23) states the importance of using reference material in visual effects, as most created visuals are either real or a combination of real components as in fantasy. The audience will believe in that which has a basis in their own reality and, if the actor does not work with sufficient reference material for the diegetic reality, the audience will become aware of this imitation (Woody 2007:23). This statement can be correlated to actors needing to have sufficient reference material and they could thus benefit greatly from a storyboard. The director usually has a pre-visualisation storyboard, which according to Bill Westenhofer, the visual FX supervisor on *Land of the Lost* (Silberling 2009), is essentially a moving storyboard (*Science of the movies* 2009d). This could also be very helpful to actors, as Will Farrell proved on the set of *Land of the Lost* (Silberling 2009) when, after he had seen the pre-visualisation, he improvised actions that fitted the idea and which the director then used (*Science of the movies* 2009d). On the set of *300* (Snyder 2006) the "effects supervisors worked

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with temporary composites to help orientate actors" (Idelson 2007:A2). Finance and Zwerman (2010:172) explain pre-visualisation as a Previs – "a fully animated, three-dimensional storyboard in motion" where every character, action and camera movement can be created and played back to the filmmaker and everybody who can benefit from seeing it.

The most advanced help actors can get when working with green screen is the process used on the set of *Avatar* (Cameron 2009). During the shoot the director used Simulcam, a process which allowed director James Cameron to swap the green screen for CG backgrounds while shooting live action. This was a "great morale booster for the actors, who could see their performances in context" (Avatar: the filmmaking future is now 2010:3). James Cameron could see his live actors and set blending and interacting with the virtual environment and CG characters on the screen in real time (Duncan & Fitzpatrick 2010:224). Cameron suggests that the simulcam and the technology that follows from this will become the norm in filmmaking (Duncan & Fitzpatrick 2010:231). This will contribute to the congruence of the character's reality with the filmmaker's created reality.

The Encodacam Visualization System is another system that accomplishes the same tasks as the simulcam, and Finance and Zwerman (2010:59) comment that it allows the actors to be recorded in front of the green screen while combining it with the pre-existing virtual background in real time and in sync. This pre-visualisation helps everyone, including the director and actors (Finance & Zerman 2010:59). The filmmaker can assist the actor, but in order for the actor to share in this created reality, to believe in the prompts from the filmmaker and storyboard and to bring believability to the character and his surroundings when stepping in front of the green screen, the actor has to make use of his imagination.

Even when actors physically know where objects will be or what the environment will look like, they still need to 'place' themselves in those environments and have *scenic faith*, otherwise Wolf's (1995:53) statement that "actors composited into a shot lack presence within it during production" will ring true. O'Brien (1983:188) states that the actor must visualise specific objects in his imagination and that the key to playing these kinds of scenes lies in specificity. Another important component is to believe

your imagination, as Foster quotes the actor Matthew Nicolau:

> If you aren't really diligent, you quit believing the circumstances which
> [sic] … then your character doesn't live. That's the most difficult part,
> to constantly be believing where you're at (Foster 2010:217).

This possible limitation of both the actor and the filmmaker can be transferred between the two, where their imagination has to coincide. It is thus important for the actor to employ a technique or training regime that will nurture and strengthen his own imagination to believe 'as if' he were in the environment and help him achieve *scenic faith* within the confines of green screen technology.

Even though filmmakers can composite lavish landscapes, extraordinary settings and props, CG characters and environments, and build amazing scenes, it is still the actor that brings life to the scene. As the presenter Nar Williams says in *Science of the movies* (2009a), "[i]t is the human element that makes a shot great". Therefore the actor needs an inner technique and strategy to navigate a green screen scene successfully; a technique that not only stimulates his imagination, but also creates a reality for him that is congruent with the reality of the scene. The *magic if* of the Stanislavsky system, as this study will demonstrate, is such a technique.

2.5 CONCLUSION

This chapter highlighted key moments and processes from the historical development of visual effects to emphasise the importance of these effects in the creation of film's diegetic world. In providing this overview, it became clear that the actor needs to work in congruence with visual effects so as to create a convincing, believable diegesis. The above overview laid the foundation for the discussion of the intricate role green screen technology plays in the variety of visual effects at the director's disposal. This variety of visual effects was briefly discussed. Throughout, it was evident that visual effects as a form of film technology have always posed particular challenges to the actor from silent cinema onward. The frequency of green screen technology today, however, far eclipses that of the older (not to say redundant) technologies discussed above.

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Green screen technology was further discussed in relation to the challenges it presents to the actor's work and processes in both film and television. From the above, the following challenges became apparent:

- In the absence of external stimuli *scenic faith* may be jeopardised.
- Training should take place to prepare the actor to access relevant information in order to achieve *scenic faith* in the green screen environment.
- Physical interaction with the environment (set) is restricted, as sets are often almost exclusively virtual.

These challenges signal the need for training that assists the actor working with green screen technology to create *scenic faith* 'as if' there were a single plane of activity as opposed to the multiple planes that are involved in visual effects. Such *scenic faith* relies on the imagination to guide the actor in responding to whatever object or stimulus is 'present' in green screen, a process this study will detail in the following chapters. Indeed, this notion of 'as if' and the actor's use of imagination correlates with Konstantin Stanislavsky's notion of the *magic if*. In the following chapter Stanislavsky's acting system will be framed by a review of the scholarship. In addition, the notion of the *magic if* will be delineated and discussed along with its various components and the way in which it can assist the actor in navigating the challenges, as discussed throughout the current chapter, posed by green screen technology.

CHAPTER 3
STANISLAVSKY AND THE *MAGIC IF*

3.1 INTRODUCTION

This chapter aims to survey and discuss Konstantin Stanislavsky, his guidelines and his techniques collectively known as 'the system'. It will define the *magic if* and then offer and discuss the way in which the use of the *magic if* can assist the actor in circumventing the possible challenges that can arise in green screen acting. The strategy to be followed will be a literature review on Stanislavsky and his system, specifically delineating and discussing the components of the *magic if*. The motivation for this interrogation is to understand the concept of the *magic if*, its components and its viability when applying it to green screen acting.

By framing Stanislavsky's system, one is effectively investigating a series of exercises and techniques developed to assist the actor to portray a character convincingly in the diegetic world by achieving *scenic faith*. It is necessary for the actor to understand the importance of technique within the art and craft of acting. Merlin (2010a:35) argues that acting requires more skill than society presumes and therefore actor training is a necessity. According to Boucicault (1970:548) good actors are trained actors and this is not merely a simple coincidence. Belasco (1970:578) posits that even though a person may have the potential to act, acting skills still need to be taught, just as people who have talent in other artistic fields, such as singing and painting, still need to be trained in the relevant techniques of their art. Acting is both science (principles of acting) and art (practical application) (Belasco 1970:578) and therefore the actor needs to be trained to comprehend and apply the principles and techniques necessary to confidently and successfully execute the task of acting.

Belasco (1970:579) argues that no great moment in acting has ever transpired without the actor being well prepared. According to Merlin (2010a:134) good technique is part of convincing acting. Although acting has its roots in the spiritual and inspirational, it is through technique that the actor employs his body and mind, and is able to repeat the desired effect on demand (Fiske 1970:585). Krasner

(2012:3) posits that technique is a specific route taken to incorporate all the tools available to the actor in his body and mind and, as a result, it liberates him as an artist. Merlin (2010a:72) suggests that training is needed to instil confidence in the actor. It is through appropriate implementation of technique that the actor appears fluently congruent with the proposed circumstances, as if there were no technique being applied (Lutterbie 2011:131). For the actor in film, having a good technique is even more important for it gives him more control in an environment where his control is restricted. Carnicke (2009:205) echoes this sentiment when writing on the difficulties the actor faces in film, which include, but are not limited, to the following:

- Scenes not shot in order. Accordingly, the linear development of the character's reality, congruent during stage acting, must be imagined by the film actor.
- The actor has to imagine other characters within a scene, as his fellow actors are not always present.
- Sound and special effects are added during postproduction and must be imagined by the actor.
- Editing (postproduction) creates the diegetic reality using effects and the manipulation of captured performances.

All training targets the preparation of the actor to circumvent challenges that might arise in reality while portraying a character in the diegetic world (Merlin 2010a:36). This indicates how crucial it is to have a good technique in any acting environment and training should be regarded as a catalyst for developing a good technique to address the challenges that might arise when green screen technology is used. Gordon (2006:2–3) argues that each contemporary culture influences the actor that is part of that culture in terms of his techniques and his presentation. Techniques have to be adapted to current sociocultural expectations and their influence on the entertainment industry in order for congruency within the new culture and new artistic forms to take effect (Gordon 2006:354).

The present technological computerised era has given birth to a culture that necessitates the construction of an acting technique that assists the actor in

portraying characters in a technological setting such as green screen. The use of the *magic if* as a basis for 'green screen acting' is a possible solution owing to its substance and its roots in the actor's imagination. Stanislavsky did not invent, nor was he the first to use, the *magic if*, but he was the first to formulate it as a method for the actor. This necessitates a discussion on Stanislavsky and his theories.

3.2 THE *MAGIC IF*

3.2.1 Stanislavsky's significance

According to Blair (2008:28) and Lutterbie (2011:28), Stanislavsky's influence on acting has been grander than any other acting theorist (see Milling & Ley 2001:1).[12] Indeed, Stanislavsky is seen as the patriarch of the modern acting tradition and acting teaching (Merlin 2007:3; Krasner 2012:4). Carnicke (2009:1) underscores this, stating that Stanislavsky "revolutionized actor training around the globe". Gordon (2006:87) agrees as regards the influence Stanislavsky's system had on theatre. Although Stanislavsky worked in theatre, his acting principles can cross over to film acting. Baron and Carnicke (2008:33), who use Stanislavsky's notions in both theatre and film, agree that performance on both stage and film require equal dedication and skill. The distinction between film and theatre acting is not particularly great (Krasner 2012:7), and the cross-media use of Stanislavsky's methods is justifiable.

According to Hornby (1992:151), Stanislavsky is one of a small number of writers who defined an inclusive acting theory to assist the actor in dealing with and incorporating all styles of theatre. Konstantin Stanislavsky's life work focused on accessing the superconscious with the help of the conscious mind (Stanislavsky 1967:446). The superconscious is, in Stanislavsky's terms, the inner creative state when the actor is aware of everything and open to allow subconscious activity to take place (Stanislavsky 1973:281–282; Merlin 2007:49). Merlin (2007:51) posits that this inner creative state can be attained by relaxation, attention, observation and believing in the possibility of the scene taking place, which is the foundation for *scenic faith*. In performance terms, this creative state is called the inner creative

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[12] Blair refers specifically to American acting, but her argument is applicable to all Western Acting training approaches.

mood (Merlin 2007:259).

Stanislavsky framed that which actors have 'naturally' and constantly done from the beginning and will do in the future (Hornby 1992:151) in order to structure the "natural"[13] and often unconscious acting processes into consciously applied technique (Merlin 2007:4). He scrutinised these natural tendencies for positive or negative influences on the actor's performance and suggested processes on how to utilise the positive influences. Through dedicated and continuous examination of the body and mind of the actor he tried to determine and apply the "rules of nature" and biology (as perceived by him) to guide the actor in improving the actor's bodymind[14] (Merlin 2003:20).

Stanislavsky's system provides the actor with the knowledge to work with his inner being and awaken the creative state of the superconscious through conscious methods (Stanislavsky 1967:186). Through conscious preparation, the subconscious can work creatively and freely (Merlin 2007:174, 247). Stanislavsky (1967:177) realised that the "feeling of truth" for the actor on stage could be acquired through deliberate actions, strategies and techniques, and would allow for creativity to be accessed more easily. Stanislavsky harnessed and established these deliberate actions, strategies and techniques in his writings.

This was Stanislavsky's approach to preparing the actor to portray a character in a truthful and believable way. This approach became known as Stanislavsky's system, although Stanislavski[15] (2010:611) rejected this label, as he believed that his approach was organic and thus no one had invented it. All subsequent western acting training systems are grounded on the theories of his system (Krasner 2012:16). Many of the great western teachers of acting, such as Stella Adler (*The art of acting* 2000), Lee Strasberg (*A dream of passion: the development of the method* 1988), Sanford Meisner (*Sanford Meisner on acting* 1987), Robert Lewis (*Advice to*

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[13] Organically true to the function and expression within holistic human activity.
[14] The term "bodymind" is used to express the holistic nature and reciprocal relationship of the body and mind (Kemp 2012:xvi).
[15] There are two acceptable spellings: Stanislavsky and Stanislavski. Benedetti (2010) uses the latter in his 2010 translation. In this study I use Stanislavsky, the spelling used by Carnicke (2009) and Merlin (2010a, 2010b), and in Hapgood's (1967, 1973, 1987) original translations. I use Benedetti's spelling when citing from the 2010 translation.

the players 1993) and Utah Hagen (*Respect for acting* 2008), constructed their teachings on Stanislavsky's work (Blair 2008:2). The various acting systems based on the original system seem to derive from developmental, political and semantic issues.

Stanislavsky's writings were censored in the USSR (Carnicke 2009:94–95) and his work suffered from poor English translations (Carnicke 2009:76–77). Milling and Ley (2001:4) agree that the differences between the Russian and English versions result from the time of publication (as this section will indicate) and a lack of editorial support. Merlin (2010a:163) argues that there are still remaining issues relating to translation and terminology.

According to Carnicke (2009:7), the United States of America focused more on the psychological aspects and processes of Stanislavsky's system, owing to Freud's influence in psychological circles during that period. The Soviet Union, on the other hand, focused on the system's physical processes owing to Marxism's (Carnicke 2009:7-8) privileging of the material force in post-revolution Russia. Stanislavsky also correlated his system with Pavlov's work on conditioning as a key component of behaviourism,[16] which appeased the authorities (Carnicke 2009:162). The Soviet emphasis on materiality was so dominant that in 1934 Stalin declared Stanislavsky's system as the "gospel of Socialist Realism", owing to its focus on the physical and its ignoring of the inner action (Merlin 2010b:153). Both the United States and the Soviet Union neglected Stanislavsky's focus on symbolism and formalism; nor did they acknowledge his use of yoga or his stance on the integration of body and mind in acting and directing (Carnicke 2009:7–8). This is a reflection of the sociocultural paradigms as mentioned above.

Another reason for the confusion relating to Stanislavsky's system is its ever-evolving nature (Kemp 2012:145). Stanislavsky's early thoughts and practices were taken to the United States and taught by Richard Boleslavsky in the 1920s, as he immigrated shortly after working with Stanislavsky at the First Studio (Gordon 2006:71–72). Therefore, only Stanislavsky's earlier work was conveyed to influential

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[16] "[T]he school of psychology that sees human behaviour as physiological responses to stimuli" (Carnicke 2009:162).

acting teachers like Stella Adler and Lee Strasberg (Milling & Ley 2001:4; Gordon 2006:72). Stanislavsky reworked his ideas and practices constantly and colleagues exposed to his system at different times have different ideas concerning his system. One example that illustrates this is Stella Adler, who changed her view on Stanislavsky's practices after working with him in 1934 (Gordon 2006:74). Stanislavsky remains amongst the most written about acting theorists – consider the work of Blair (2008), Carnicke (2009) and Hodge (2010) in this regard – as a result the confusion over his work has subsided and the different strands of and variations on the system have become crystallised. Merlin (2010b:9) and Carnicke (2009:209) position Stanislavsky as an acting master whose work can still guide and teach the contemporary actor on the craft of acting.

3.2.2 Stanislavsky and his evolving system

The previous section discussed Stanislavsky's influence on actor training and technique and substantiated the worth of implementing a notion described by Stanislavsky. The following section traces Stanislavsky's history to indicate the reason for and development of the system over years of observation and experimentation, as well as the system's foundation in human behaviour and development. This section will discuss Stanislavsky's empirical approach and his inclusion of various fields in order to comprehend human behaviour, gain knowledge that assists the actor and develop processes to positively influence the actor's performance. The evolving nature of his work and his interests in other fields pertinent to acting and their practical implementation gives impetus to the investigation of fields such as cognitive neuroscience and their practical applicability to acting, as is done in this study.

Konstantin Sergeyevich Alekseyev was born in Russia in 1863 to a wealthy and theatre-loving family who transformed a room at their country house for the children to perform plays in for guests (Merlin 2003:2; 2007:4). Stanislavsky was passionate about acting and kept notebooks on the discipline from an early age (Gordon 2006:40). By the time he was 22 his many notebooks assisted him to investigate his acting processes (Merlin 2003:2; 2007:4). He took the stage name Stanislavsky so that he would not tarnish his family's reputation by being an actor (Merlin 2003:2).

According to Merlin (2003:6–8), Stanislavsky's focus on the internalisation of acting can be attributed to the state of Russian theatre, where actor coaching was rare, actors mimicked other actors, rehearsals were short, lines were forgotten and actors were employed as a certain fixed type (*emploi*) that resulted in audiences expecting their favourite actors in certain *emploi*. Most actors mimicked other actors as a result of apprenticeships and mimicking itself was regarded as an art (Gordon 2006:38).

Stanislavsky, together with Vladimir Nemirovich-Danchenko, later founded the Moscow Art Theatre in which they strove to break away from the traditions and representational acting of the Russian theatre (Merlin 2003:8–9; 2007:5; Carnicke 2009:28). In this theatre Stanislavsky took the position of both actor and director (Merlin 2003:8-9). Merlin (2003:12) states that Stanislavsky was very interested in Émile Zola's (1840–1902) concept of naturalism,[17] which provides real-life imitation to the art of theatre and which could provide a break with representational acting. Stanislavsky implemented many of Zola's ideas of naturalism in his work with Anton Chekov's plays performed by the Moscow Art Theatre.

Subsequently, Stanislavsky established his name as one of the great theatre actor/directors; he was hailed as one who could recreate the impression of reality on stage like no other (Carnicke 2009:22). Carnicke (2009:22–24) explains that great artists wanted to work with him and the actors that Stanislavsky collaborated with and observed include Eleanora Duse, Fyodor Chaliapin and Tommaso Salvini (Gordon 2006:41). According to Gordon (2006:39), Stanislavsky developed his system and an acting terminology practically from 1906 until his death in 1938. As a foundation for his system, Stanislavsky used his own experiences on stage along with those he observed in others when "the life of the human spirit"[18] seemed present on stage (Merlin 2003:20). He scrutinised these moments in order to achieve these moments practically through the use of the system (Merlin 2003:20). Stanislavsky believed that these acting moments could be achieved through an equilibrium between the conscious and subconscious (Merlin 2003:25).

In 1905 Stanislavsky founded the Theatrical Studio in order to establish a place

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[17] A concept that considers humans as a result of their heredity and environment (Merlin 2003:12).
[18] Full embodiment of the character (Merlin 2003:159)

where actor training in psychophysical techniques could take precedence (Merlin 2003:18). Unfortunately, the Theatrical Studio lasted only five months; this setback, along with his financial problems, the death of Anton Chekov, his constant artistic friction with Nemirovich-Danchenko at the Moscow Art Theatre and his struggle with the shortfalls of his own acting techniques forced him to re-evaluate the rudimentary processes of acting (Merlin 2003:19). In 1906, Stanislavsky went to Finland on holiday where he started interrogating and theorising acting practice (Gordon 2006:42; Carnicke 2009:32). This interrogation finally led to a formalised 'system' for acting (Merlin 2003:19; 2010a:162).

In 1912 Stanislavsky founded the First Studio where he started implementing his system and soon two other studios followed (Carnicke 2009:34). In these studios he worked endlessly on the acting craft and actor training. Stanislavsky's system remained ever evolving until his death in 1938, when he was still experimenting and working on active analysis (Merlin 2003:35–37). According to Carnicke (2009:32), when Stanislavsky returned to Moscow he converted these interrogations and theories into practice by experimenting with various exercises from various sources.

Subsequently, Stanislavsky's system has taken on a structured approach. Carnicke (2009:226) describes this system as Stanislavsky's own term for his comprehensive techniques and stimuli for the actor. Stanislavsky evolved and fine-tuned these techniques and stimuli as his experiences within directing and teaching grew (Merlin 2003:20). To Stanislavsky this system was not a fixed syllabus or style on its own, but rather an approach that can be applied to any type of performance (Merlin 2003:25; Stanislavski 2010:611–612; Krasner 2012:4), whether it be "realistic, symbolist, theatricalist, absurdist, etc." (Carnicke 2009:34). The fact that Stanislavsky saw his system as a guide for different styles, that he himself revisited techniques and strategies and continued to develop his system, allows one to interpret and develop his theories into one's own technique for working with other styles – which in this study revolves around green screen.

When the actor can completely imagine and believe in the proposed circumstances of a scene (crucial to green screen acting) and have control over his physical, emotional and mental resources, the "life of the human spirit" can be achieved

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(Merlin 2003:159–160). According to Chekhov (1983:128) and Merlin (2003:20) the system has two divisions: first, work on the self to develop the psychological and physical instrument of the actor; and second, work on the role through investigation and breakdown of the character and his circumstances. The first division has two subdivisions which are divided into the outer (voice and body) and the inner (relaxation, concentration and imagination) (Merlin 2003:20). The purpose of this study is to primarily consider and develop the inner work, that is, concentration and imagination, and to align it with Stanislavsky's belief in the inter-relationship of mind and body.

Stanislavsky's interest in integrating the mind, body and soul led him to yoga practices, specifically hatha and raja yoga, and the writings of Ramacharaka[19] (Carnicke 2009:169–172). Hatha yoga is the discipline of relaxation through breath and body work, and raja yoga trains the mind through exercises in visualisation, concentration, meditation and observation (Carnicke 2009:227). In working with green screen both hatha and raja yoga can be helpful in assisting the actor to overcome specific green screen challenges. Yoga originated in the eastern religions of Hinduism and Buddhism and is a bodymind discipline that strives to lift a person onto a higher level of consciousness or, in Stanislavsky's terms, superconsciousness (Carnicke 2009:227). According to Gordon (2006:47–48), Stanislavsky's notion of communion is grounded in yoga. This notion will be explored in section 3.2.4 number iv.

When working with Stanislavsky's system it is important to comprehend what Stanislavsky aimed to achieve. Two important acting states, which he focused on and attempted to attain within the acting space, were termed 'experiencing' and 'psychotechnique'. These will be discussed in the paragraphs that follow.

i. Experiencing

One of the key terms or acting states Stanislavsky focused on was 'experiencing'

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[19] Ramacharaka is the pen-name of yogi and metaphysician William Walker Atkinson (1862–1932) (Carnicke 2009:154, 172).

(Carnicke 2009:129). When belief and truth[20] are achieved by the actor within the diegetic world, then the actor is experiencing (Stanislavski 2010:154). According to Carnicke (2009:218) experiencing can be induced through techniques that promote the creative state or superconscious and vitality of the actor. The actor achieves "subconscious creation" (Stanislavski 2010:17–18) through the implementation of the system's conscious techniques. The actor is experiencing when he is living in the now, what Stanislavsky also calls "I am" or "I am being" (Carnicke 2009:129–130; Stanislavski 2010:70). When the actor's total being is absorbed by and in the environment (Spolin 1970:642), then the actor is being or living completely in the moment of the scene (Carnicke 2009:218). Experiencing is thus a fundamental part of working in the green screen environment.

Experiencing is closely related to *scenic faith*, as living or being in the moment of the created diegetic world is crucial to believing the circumstances surrounding the character within that world. Carnicke (2009:217) and Krasner (2012:133) posit that experiencing has a component of improvisation as each time the moment is portrayed it is instinctive, new and in the present moment. Lutterbie (2011:167) agrees that the presence of an improvisatory nature within the diegetic world while being able to adapt to any changing situation is referred to as 'being in the moment'. The ability to have an improvisatory reaction to impulses which lead to experiencing and *scenic faith* is crucial to the actor and can lead to wonderful integration with the proposed environment. This was demonstrated in chapter 2 by Will Farrell's improvisation in the green screen environment. When working with green screen this improvisatory reaction needs to be congruent with the proposed environment so as not to break the reality of the diegetic world.

Experiencing indicates the need for the actor's whole being to be activated while in the acting moment (Krasner 2012:155). Another acting state that Stanislavsky attempted to achieve and which involves the activation of the entire being is termed 'psychotechnique'.

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[20] Truth refers to the actor's belief in and congruency with the diegetic world, which includes behaviour, emotion and thoughts (McGaw, Stilson & Clark 2012).

ii. Psychotechnique

Gordon (2006:44) proposes that Stanislavsky realised the need for a psycho-technique as a result of the worldview relating to human psychology during his time. He based his concept of a psychotechnique on the psychophysical theories of Théodule Ribot (1839–1916) who spoke of the indivisible nature of body and mind (Carnicke 2009:222). In other words, that which the body does will affect the mind and vice versa. Merlin (2007:21; 2010a:14; 2010b:4, 27) describes it as when the outer body and the inner mind are in synchronisation or communication. Stanislavski (2010:254) posited the crucial nature of the bodymind biological connection and interdependency.

The psychophysical nature of the actor has three components: mind, emotion, and the bodily action that becomes visible as a result of the first two components (Merlin 2003:159; 2007:162). Stanislavsky called these the "inner motive forces" or "inner psychological drives" (Stanislavsky 1973:247; Stanislavski 2010:276; Merlin 2010b:15). It is the interaction and interdependence between these components that form the core of psychophysical methods (Milling & Ley 2001:19; Merlin 2003:159; 2010a:98; Kemp 2012:63). By activating one component of the inner motive forces or inner psychological drives, the other components will be activated (Stanislavski 2010:280). Merlin (2010b:15) posits that if the actor is physically active, with the imagination fully activated towards the action, then emotions 'true' to the situation will surface. The inner psychological drives activate the psychotechnique which, in turn, promotes 'in the moment' acting and experiencing. Lutterbie (2011:169) agrees that when the actor is involved in interaction, thinking and feeling he achieves the state of 'I am being'. According to Gordon (2006:354–355) most actor training systems today regard this psychophysical relationship as essential to training. Stanislavski (2010:279) argues that the activation and collective teamwork of the forces will permit "creativity to flow". Knowing that the mind and body have a reciprocal relationship is crucial for the actor.

As discussed above, the actor needs a technique for using his body and mind, specifically in order to optimise his ability to access a psychotechnique and enter Stanislavsky's notion of experiencing. The present technological computerised era

has placed different demands on the contemporary actor; therefore acting principles need to be reconsidered to construct an acting technique which promotes the psychophysical and experiencing. This leads to *scenic faith* within the green screen environment.

Both these terms, experiencing and psychotechnique, are used within the confines of the system and are of importance when working with green screen, because experiencing is linked to *scenic faith* and psychotechnique could assist in enticing the imagination and bodymind. Within the system there are many terms, concepts and techniques, but one of the most notable and important components and techniques that could assist when working with a green screen is the *magic if*.

3.2.3 The concept of the *magic if*

The *magic if* is an important component in the system and Merlin (2007:122) lists it, along with imagination and observation, as a vital tool in achieving 'truth'. Carnicke (1998:149) maintains that Sakhnovsky mentions the *magic if* as one of the nine key techniques of Stanislavsky.[21] Blair (2000:202) states that the *magic if* is one of the essential components of the system, while Merlin (2010a:113) suggests the *magic if* is the system's "'bedrock'".

The *magic if* is used to assist the actor to shift from his reality into a creative imaginary environment (Stanislavsky 1973:46; Stanislavski 2010:48). For the actor who only has a green screen, this is of the utmost importance. Stanislavsky (1973:56) believed that the use of the *magic if* would entice the inactive imagination of the actor. The use of the word *if* not only stimulates the imagination but also includes the stimulation of the actor's thought processes and the logic used in understanding a scene (Moore 1984:26). *If* allows for possibilities and the *magic* throws the actor into the diegetic world (Merlin 2010a:113). Stanislavski (2010:49–50) distinguishes between single-storey *ifs* (immediate *if* with action response) and multi-storey *ifs* (multiple connected *ifs* within a play from various sources). The use of the *magic if* will assist the actor to achieve, through imagination and logic, *scenic*

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[21] Sakhnovsky writes in Russian and I thus have to rely on Carnicke's reading of the article.

faith within the diegetic world.

Two more attributes are associated with the implementation of the *magic if*. Firstly, the *magic if* elicits creativity in the subconscious mind (Stanislavsky 1973:50; Stanislavski 2010:52). Even Charlie Chaplin acknowledged in an article in 1931 that he used the *magic if* in his creative work (Moore 1984:26). Secondly, the *magic if* assists to create within the actor feelings and emotions that are presumed to be authentic within the circumstances provided by the scene (Stanislavsky 1973:50; 2010:52). These seemingly 'true' feelings toward the given circumstances of the imaginary world create *scenic faith* when working with green screen.

Stanislavsky (1973:51) argues that the basis for *if* is the given circumstances; the two concepts have to be used in combination as they are each other's life force (Stanislavski 2010:52). Without given circumstances the word *if* cannot be implemented effectively and without *if*, the given circumstances cannot be portrayed with sincerity. Stanislavsky explains what is meant by "given circumstances":

> They mean the plot, the facts, the incidents, the period, the time and place of the action, the way of life, how we as actors and directors understand the play, the contributions we ourselves make, the mise-en-scène, the sets and costumes, the props, the stage dressing, the sound effects etc., etc., everything which is a given for the actors as they rehearse (Stanislavski 2010:52–53).

The given circumstances incorporate every detail that can be taken or concluded from the text (Gordon 2006:51; Carnicke 2009:218), including the history and social environment that influence the character's actions (Carnicke 2009:218). The ideas and production facts provided by the director and the medium of presentation (film, television, stage, etc.) must also be taken into consideration (Merlin 2007:67; Carnicke 2009:218; Merlin 2010a:101). Baron and Carnicke (2008:63) posit that the given circumstances determine the characteristics of the filmic characters portrayed by actors. These circumstances, which include the composition of the external environment, are of great importance when working with green screen, as a precise knowledge of what the character's circumstances are will provide a solid base to

work from. Merlin (2003:159) states that the given circumstances are required by actors to effectively interpret their characters as well as to elicit the actor's imagination (Merlin 2007:67). Toporkov[22] expresses that "[a]rt begins where there is no role, when there is only 'I' in the given circumstances of the play" (Carnicke 1998:163). The 'I' therefore considers every circumstance that is supplied and applies it to himself and his role: "actors transform themselves into their characters by paying strict attention to all the minutiae of the circumstances, what Stanislavsky called the 'facts' of the play" (Carnicke 2009:203).

The circumstances of the situation created in the diegetic world are what effects the actions and thoughts of the character and must be integrated by the 'I' (Carnicke 2009:204). By knowing these circumstantial 'facts' the actor can move forward in understanding the *magic if*. According to Benedetti (1998:6), this is a spontaneous process where the actor studies the circumstances and events in the script and then says: "**What** 'if' … they were true?" [emphasis in original]. This truth or *scenic faith* is crucial to an actor's performance, even more so when working with green screen when the visual stimuli are removed and this truth is 'unseen'.

Stanislavsky (1967:430) suggests that the actor's first priority is to believe in the events that take place on stage. This is what the actor is concerned with, to believe and relate to the imaginary life and all that it encompasses. To overcome this challenge Stanislavsky created the *magic if* mechanism or, as referred to by Strasberg (1987:51), the "creative if". He needed to believe in the given circumstances. The actor recognises that the proposed circumstances are not reality, but with the implementation of the *magic if* mechanism he decides that "*if* they were true, then I would do this and this, and I would behave in this manner and this way toward this and this event" (Stanislavsky 1967:430).

This is the foundation for the use of the *magic if*: to believe in the manifest existence of the proposed surroundings. The *magic if* and given circumstances promotes "belief onstage" (Stanislavski 2010:153). Of course the actor never ceases to act and never truly gives up reality for this imaginary environment. Benedetti (1998:1),

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[22] Vasily Toporkov was an understudy of Stanislavsky and his system (Merlin 2010b:16).

echoing Stanislavsky, maintains that if the actor completely believes that he is the character in the proposed surroundings then the actor is irrational and requires a psychiatrist. Carnicke (1998:135) explains that the *magic if* assists the actor to make an important distinction between his imagination and hallucinations, as hallucinations will render his performance weak and uncontrolled. In green screen acting this separation between hallucination and imagination is of significance for controlling the *scenic faith* and allowing the actor to believe in the circumstances.

Moore (1984:25) states that Stanislavsky suggested that the actor can believe in the suppositions or proposed circumstances the diegetic world creates without completely believing the reality created by the diegetic world of the stage as real. Through the use of the *magic if* the actor can believe in the "imagined truth" (Stanislavsky 1967:430). The *magic if* formulates a hypothesis which is accepted by the actor with the understanding that it is not reality (Stanislavski 2010:51). When the actor believes in the circumstances or ideas of the diegetic world and follows the logical sequence and significance of that belief, then it will become "true" (Benedetti 1998:5).

Merlin (2007:115) maintains that as "long as there is LOGIC AND COHERENCE" [emphasis in original] within the context of the scene, belief can be obtained. Logic and sequence have to be applied to thoughts, actions and words (Stanislavski 2010:169). McGaw (1966:8) posits that the actor has to believe in his actions and his first responsibility to the viewer is to convince them to believe in his actions as well. When the actor is convincing enough then the audience will also believe in this truth created by the diegetic world (Benedetti 1998:5). This belief can be correlated to the imagination and the *magic if* (Blair 2000:208). The *magic if* gives the actor the ability to change his circumstances and respond immediately by changing his actions to reflect the new circumstances.

Accordingly, Stanislavsky (1973:47) challenged his actors by asking them how their actions and thoughts would have been influenced *if* the suppositions provided were a reality, arguing that it would leave the actor to "feel what anybody in the given circumstances must feel". Stanislavsky compared the implementation of the *magic if* to a children's game where the children change the suppositions of a simple task; for

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example the action could be drinking tea, but the supposition could be what *if* the tea were castor oil or syrup or anything other than tea, then how would that supposition change the drinking action and reaction (Stanislavsky 1973:59; Stanislavski 2010:65). This forces the actor to imagine the supposition and change his behaviour to comply with it. The *magic if* and given circumstances are imaginary suppositions that must be complied with (Stanislavski 2010:53). Silverberg (1994:93–94) argues that acting is the acceptance of these suppositions or imaginary circumstances and "living them out as if they are true". The key word here is living, for the *magic if* urges the actor towards action, whether it is external or internal.

The question the actor must ask himself should never be "How would I feel if …", but rather "What would I <u>do</u> if …" [emphasis in original] (McGaw 1966:15). There must continually be a purpose for action. The impetus for the action is "What would I do if my fiction became fact?" (Stanislavski 2010:84). The actor has to work with his imagination and communicate the inner processes through action (Stanislavski 2010:67). Merlin (2007:127) argues that the *magic if* is the tool that links action with the actor's inner processes. As described above, action is part of the inner motive forces which lead to psychophysicality and promote experiencing. According to Stanislavsky, the use of this "motivated action" in conjunction with the notion of the *magic if* and proposed circumstances is the basis from which an actor has to work (Blair 2000:204). He was so convinced of the *magic ifs* value that he believed creativity emerged when this mechanism was applied within the imagination of the actor (Stanislavsky 1967:430).

The *magic if* has been used in different ways by different acting teachers. Kemp (2012:109) posits that many teachers have altered the *magic if* question by rephrasing it as "What would I do if I were the character in the situation?" This rephrasing allows the actor to involve the fictional character's personality in his decisions and actions (Kemp 2012:109). This is a crucial step when portraying a character in the proposed surroundings of the green screen and needs to be incorporated by the actor.

Other acting teachers that altered the use of the *magic if* include Lee Strasberg. He did not believe the way Stanislavsky used the *magic if* would always assist the actor

to believe in the proposed circumstances and consequently would not assist the actor to achieve 'truthful' acting (Strasberg 1987:52). Rather, working from Vakhtangov's blueprint, he reformulated Stanislavsky's assessment to better suit, according to him, the vast variety of circumstances that the actor might face (Strasberg 1987:85–86). In this reformulation, rather than asking "What would I do if…? ", the actor must ask "What would make me, the actor, react the way the scene demands?", since the scene requires the actor to behave in a certain manner (Strasberg 1987:85). Therefore the actor does not conform to the circumstances, but rather transforms the circumstances to what he requires to be able to produce the desired result, in action and feeling, required by the scene and director. As Strasberg (1987:86) writes:

> The actor is not limited to the way in which he would behave within the particular circumstances set for the character; rather, he seeks a substitute reality different from that set forth by the play that will help him to behave truthfully according to the demands of the role.

Strasberg believed that this allowed the actor to react accordingly, not only to contemporary and psychological situations in the realm of the experience of the actor, but to experiences outside of his familiarity (Strasberg 1987:85).

Stella Adler used the *magic if* in much the same way as Strasberg. For example, if a scene is set in the Swiss lakes, but it does not evoke the right feeling needed by the circumstances, then the lake should be transferred to another country or setting because it is important that the actor chooses an image that "*[evokes] an inner feeling*" (Krasner 2010:154) [emphasis in original]. Krasner (2010:154) explains that to create enthusiasm and internal passion one can conjure up new circumstances as long as these are parallel to the story of the play. This means the images the actor produces in his imagination do not have to comply with the script as long as the right actions and feelings, according to the director, are produced within the actor.

The application of the technique in the way described by Strasberg or Adler might not work with film and green screen since the actions have to be able to coexist with the virtual world created. But if it is used in this particular way, without disrupting the

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actions set forth by the director, then it still incorporates the same components as the original use of the *magic if*. These variations are acknowledged but not used or verified in this study.

The *magic if* allows one to imbue the virtual reality that is constructed from the given circumstances with the lived reality occurring in the green screen environment. This straddles the lived reality of the actor and the virtual lived reality of the character. The actor willingly suspends his disbelief in the given circumstances of the character. The *magic if* is the device that 'sanctions' this crossover, while the imagination builds it; therefore imagination can be seen as one of its components. The following section discusses the components that are essential when working with the notion of the *magic if*.

3.2.4 Components of the *magic if*

i. Imagination

Carnicke (2009:219) defines imagination as "[t]he actor's capacity to treat fictional circumstances as if they were real". Kemp (2012:110), on the other hand, posits that the imagination is a mental depiction created from physical environmental information and memories. Chekhov (1991:4) argues that the images in the mind are as real to the mind as the images perceived through the actual eye and thus can excite feelings. Stanislavski (2010:74) posits that mental images elicit a parallel feeling which induces the desired experience. Merlin (2010a:57) concurs by stating that the "[i]magination is highly psycho-physical". According to Stanislavsky (1987:21), the imagination knows neither obstacle nor the impossible. With the incredible worlds and fantasy available when using green screen technology, imagination becomes crucial. Stanislavsky gives weight to imagination when he writes, "[w]ithout imagination there can be no creativeness" (Stanislavsky 1987:20).

According to Milling and Ley (2001:9) Stanislavsky believed that the actor needs to depend on imagination in order to bring life to the external circumstances. When these external circumstances are made minimal, then the imagination plays a more crucial role in creating *scenic faith*. The imagination is fundamental in displaying

virtual reality (Milling & Ley 2001:18), which is what the actor deals with in green screen acting. According to Stanislavski (2010:74), the content that emerges from the imagination is projected as if the content stemmed from an outside source. Actors see, hear and taste with their inner imaginary senses, but the content is distinguished as coming from an outside source (Stanislavski 2010:75). This imaginary outside source is crucial when the actor has to coexist with the diegetic virtual world. The imaginary outside source will establish that the diegetic world is an environment outside of the actor and not an imaginary supposition from within. When working with green screen, the actor has to take direction as to where certain external components will be added in postproduction and adjust accordingly. Merlin (2007:123) states that an actor whose imagination is operating to capacity will be able to incorporate any direction given to him.

Stanislavsky posits that the actor can develop or train his own imagination (Stanislavsky 1973:55; Gordon 2006:38; Stanislavski 2010:63). Chekhov (1983:137), Merlin (2003:48) and Krasner (2012:7) concur that the development of the imagination is possible and should be pursued. This training of the imagination can be accomplished by "strengthening the inner vision" (Carnicke 2010:11). The inner vision refers to visualisation or that which one 'sees' in the mind; it stimulates the imagination and can be developed or trained through exercises geared to meditation and imagination (Carnicke 2009:227). The more detailed the senses that are involved, the more effective one's inner vision. Another way to develop the imagination is to access play and improvisation as children would (Merlin 2010a:57). As indicated before, this can be attributed to Stanislavsky observing children exercising the *magic if*. Merlin (2010a:58) argues that playing and improvisation assist the actor in developing intuition, facilitate being in the moment and strengthen the imagination.

According to Stanislavski (2010:72) there are three approaches to employing the imagination:

1. Be the spectator of the imagination; where the unfolding events in the mind are observed as a third party, the self is unseen.
2. See the self and be a spectator; where the events involve the person

imagining, but it are viewed as a third party.

3. Be an active participant; where the person imagining is actively involved in the events unfolding, viewing and perceiving in a first-person role.

The third approach is the most effective way for an actor to employ his imagination due to the actor being part of the imaginative reality. In this way the actor engages the world and actions of his imagination and thus activates inner responses to his imagination (Stanislavsky 1973:63; Stanislavski 2010:72). Michael Chekhov[23] argues that it is the duty of the actor to be an active participant; in order to accomplish this task the actor has to train his imagination's sensitivity to be able to create and build artistically (Chamberlain 2010:69). This is important for the actor because it creates a feeling of 'truth' and in the actor's imagination all must be 'true and real' (Stanislavsky 1973:157).

Since the imagination is built on components of real life (Chekhov 1983:137), the most important aspect of the actor's imagination is that it "must be thoroughly worked out and solidly built on a basis of facts" (Stanislavsky 1973:70). Stanislavski (2010:70–72) argues that a logical development within the imagination of the actor has to occur; this will allow the actor to converge the imaginary with reality. Facts, detail and logic will encourage belief within the actor and this belief will, in turn, lead to feelings (Stanislavsky 1973:148). Therefore, whenever the actor uses his imagination he must do it in full detail and never forget to adhere to the logical and the rational (Stanislavsky 1973:63).

Krasner (2012:58) maintains that Stanislavsky called for detail and specificity when working with the *magic if.* The way the actor accomplishes this task is by asking questions. In his book, *An actor prepares*, Stanislavsky (1973:65–69) implements the following exercise on one of his fictional characters, Paul, to demonstrate how this is done. Paul is asked to live the life of a tree by asking himself "*If* I were an old oak, set in certain surrounding conditions, what would I do?" (Stanislavsky 1973:65). Then he must decide where he is standing, what he sees, hears and feels, when this is happening, why he is there (all with logical detail) and then, finally, add a

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[23] Apprentice to Stanislavsky and nephew of the playwright Anton Chekhov (Krasner 2012:199)

circumstance that will propel him to an inner stimulus and action (Stanislavsky 1973:65–69). The actor uses the *magic if* mechanism to 'believe' in the possibility of being a tree and then uses his imagination to give credence to his belief by shaping the given circumstances with logical detail.

Using the example and the questions above of being an oak tree, the actor might answer them in the following manner:

> If I were an old oak tree I would stand as the tallest and oldest in the middle of a park. I can see across the entire park to all the other plants and animals and their busy lives. Spring has just arrived and I can feel a cool breeze rustling through my leaves. It is morning and I can feel and hear the birds chirping and flying near my branches and my new flowers. I can feel a family of squirrels hustling and bustling in the nest they made inside my bark. I am not only their shelter and protector, but I am also able to give cool shelter to a couple of humans having a picnic. They are laughing and surely in love. This brings forth a feeling of being strong and happy and I will continue to protect and serve.

Accordingly, the actor is able to create *scenic faith* by building the environment in his imagination.

As seen in the example above, the imagination is built and inspired by asking questions (Stanislavski 2010:79). Stanislavsky required the answering of six questions that would assist the actor with his imagination: Who, where, when, why, for what reason, and how? (Merlin 2010a:101-102; Stanislavski 2010:83). Benedetti (1998:7–8), by contrast, provides the following six questions that need to be asked: Whence, where, what, why, when and whither? Through a series of questions the imagination can produce an increasing number of images, all with more detail (Kogan 2010:156; Stanislavski 2010:82). These questions are crucial as they tap into time, space, locations, other people, series of actions, motivations – in short, animating the given circumstances needed for *scenic faith*.

The actor needs to imagine in detail, building the imagination in a logical manner.

The actor must also validate his choices within the required *as if* suppositions or proposed circumstances (Stanislavsky 1973:60). By answering these questions in full detail the actor's imagination will become more detailed and the product of the imagination will become easier to 'perceive'. Benedetti (1998:7) argues that the more meticulously the actor understands the supposition, the more detailed and meticulous the reactions and actions will be. Everything needs to be considered and worked out; there should be no elusiveness and once all the components have been considered the actor should ask himself again "What would I do if …" (Benedetti 1998:45).

In short it can be reasoned that when working with the imagination the actor has to be an active participant in a logical and detailed world that considers all the human senses and suppositions. While working within the realm of the imagination, actors must guard against the following mistakes and pitfalls (Stanislavsky 1973:58; Stanislavski 2010:65):

1) Actors force the imagination to conjure up images rather than enticing the emergence of images by asking questions. The imagination cannot be forced into immediately being within the proposed environment, but answering the right questions and working with logic it can be lured and grown.

2) Actors do not use a stimulating theme with a purpose. For the imagination to be vigorous, the mind has to have reason and interest in the imaginative realm.

3) Actors' thoughts must not be inactive, but there must be action in the imagination. As the actor must be an active participant in the realm of imagination, it calls for the actor to have motivated action.

Chekhov (1991:6) posits that the true artist should never be satisfied with the first images that he 'sees', for these images might not be the best suited images to use in the circumstances. These pitfalls, along with how the actor should approach his imagination (as discussed above), form the framework within which the actor can work successfully towards building or constructing a sustainable imaginative world. Imagination works with the reformulation of past experiences to be used in the written context of the scene (Merlin 2007:125). O'Brien (1983:132) compares the

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imagination to a sculpture where the mind uses materials from many different sources in order to create and build. One of these sources is sense memory. Kogan (2010:152) writes that in order to get into the active imagination[24] one has to use the question of '*if*' and delineate it by incorporating all of the senses. By doing this the actor delves into more than just his imagination; he combines his imagination with sense memory.

ii. Sense memory

Miller (1992:26) argues that, in order to function, humans all require constant response from sensory experience which is coupled with personal associations, therefore humans are sensory beings. Senses are thus an integral part of an organism's functioning. Humans experience everything in the world through the senses and, therefore, without senses humans cannot experience, communicate or express anything (Bowskill 1977:49). When the actor activates his imagination, he also activates his memories, which include the senses: "We can feel things in imagination at the prompting of our sensation and emotion memory" (Stanislavsky 1987:20). By using the senses the actor can stimulate his memories, as well as his imagination (Merlin 2007:143).

According to Gordon (2006:62) Stanislavsky believed the senses to be a catalyst for creativity in an actor. Actors use their inner eye, inner ear and inner feelings when working with the imagination (Stanislavsky 1987:20-21), using given circumstances coupled with memories and imagination. These 'inner' senses are that which one sees, hears and feels, not in reality but in one's imagination. The actor must use his experience and history in the creations of his imagination. McGaw (1996:12) explains that the actor must use his own experiences and inner resources, which include all he has seen, done, imagined, thought, read and observed, and use all these components within the confines of the imaginary circumstances. Actors need to exercise their "sensory perceptions", for this engages the emotional response (Miller 1992:28). Easty (1992:25) acknowledges that this is the basic foundation on

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[24] Although this concept shares components with the Jungian notion of 'Active Imagination', and uses visualisations and imagination (Spottiswood 2002:1–4), Kogan refers here more to the active participation in one's imagination that Stanislavsky writes about.

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which Stanislavsky built his system.

> It is a *remembering* of the five senses: sight, sound, touch, taste, smell. The use of Sense Memory brings a feeling of life to every object that is associated with these five senses (Easty 1992:24) [emphasis in original].

Using sense memory as an 'outside' stimulus to assist in building the imaginary world of green screen can be of great importance to the actor. According to Barr (1997:16), one vital skill is for the actor to listen, as "*listening is also sensing*" [emphasis in original]. This listening includes all the actor's senses of sight, sound, touch and feel, and also includes how the actor feels and perceives the events surrounding him as well as the events of the past (Barr 1997:16). This view of Barr is very important in green screen acting, because every outside stimulus will affect and influence the actor and he should sense and listen to these stimuli, even if they are imaginary. Krasner (2012:53) believes that working with the senses fosters the ability to react to stimuli.

Kogan (2010:67) redefines sense memory as sense data, which is the data received through the five senses. Kogan (2010:68) believes that the purpose and objective of the character is clarified and defined the more sense data is added. This allows the actor to comprehend the character's actions and 'live' within the circumstances of the character and the diegetic world, resulting in the audience's belief (Kogan 2010:68). For the actor working with green screen, sense data can assist the actor to conform to his surroundings and therefore make his intentions in the environment more defined and clear, not just to himself but also to the audience.

Lobdell (2000:181) uses the term "sensory work" rather than "sense memory", as the actor not only uses memory as a single entity but memory in conjunction with imagination to create in the acting moment. By engaging the senses the actor opens himself up to experiencing or 're-living' the said sense:

> Sensory work invites actors into the essential paradox of acting by asking them to re-create the sensations of an imaginative condition, or

if – for example, *if* you are walking in the rain [emphasis in original] (Lobdell 2000:182).

Using this analogy the actor should imagine walking in the rain, using his memory to complete the detail of the imagining. The actor must imagine/experience through recall what the rain felt like, how it made him feel, the smell of the atmosphere, the sound on the roofs and streets and much more. The memory is used to re-experience the situation. This imagined condition will assist the actor to recreate the sensations needed for the imagined reality called for by the scene and will thus offer some solution to green screen acting. This sensory work helps the actor to logically explore the circumstances, as well as logically and organically react to it.

Krasner (2012:56) concurs that the senses can assist the actor in experiencing the moment. Lobdell (2000:185) describes the "Place" exercise that provides layers, depth and detail to the awareness of the actor in relation to his real and imagined environment. While using active imagination and participating, this exercise is done by relaxing, imagining the childhood home and sensory reach, in other words what the actor feels, hears and so forth. Lobdell (2000:185) states that with this step the actor does not remember the room or the sensations, but rather experiences it in the moment. This exercise can first be done with the eyes closed, but the actor must be confident enough to later open his eyes so that the "visualized bedroom floor … coexist[s] with the studio floor" (Lobdell 2000:186). This prepares the actor to allow both the imaginary environment and the real environment to exist simultaneously; the sensory work influences what the actor perceives within the actual environment (Lobdell 2000:186). This simultaneous existing can be used in green screen when the actor uses his ability to let the imaginary world and the green screen coexist. Exploration of this coexistence will be further addressed in chapter 5 and is only provided here as an example.

This re-creating and re-experiencing are developed from memories and memories can be developed from observations. Observation also stimulates the actor's imagination (Merlin 2007:124), therefore observation is another component when working with the *magic if*.

iii. Observation

For the actor to convincingly employ his imagination and memory, he needs to continually observe the environments he enters. The actor must observe the world around him, remember his experiences and through them gather a supply of resources he can implement when building a character and performance (McGaw et al 2012:98). McGaw et al (2012:98) posit that with each character the actor creates from three sources: the given circumstances, his imagination and the actor's own history, which includes his observations. Chekhov (1983:137) states that the imagination is always created from experience, while Stanislavski (2010:71) posits the imagination's need for knowledge from other sources. Through observation the actor can expand on his own knowledge to create a greater variety of imaginative possibilities.

Observation of the world is considered one of the crucial components of actor training (McGaw et al 2012:98). By using the imagination in conjunction with observations, the actor can create a character whose actions are congruent with the diegetic world (McGaw et al 2012:98). O'Brien (1983:132) echoes this in writing that experience and observation in life will nurture the imagination. This combination is one of the actor's principal stimulants and facilitates his belief (McGaw & Clark 1996:96). Michael Chekhov, a student of Stanislavsky, believed creativity started with the observation of existing images or images of the imagination (Gordon 2006:62). When the possibilities are as varied as happens with green screen acting, it is crucial to build a repertoire of observation for the imagination.

Observation will not only build the actor's storage, sensory and muscle memory, but will also open him up to authenticity and the imaginative world (Boleslavsky 1949:107). The actor has to incorporate an understanding of what he observes, including the impact, effects and reactions created by the observed object or event (Stanislavski 2010:227). This will guide him in implementing them in an effective correlated circumstance. Stanislavski (2010:116–117) maintains that observation can build a greater repertoire within the memory when the imagination is involved while observing. The scene being observed does not need to be factual, however, merely filled with creative emotion.

In order to use the *if*, the actor may need to do some research (Kearns 1996:74) to understand what he is imagining, for example *if* the actor needs to portray an illness. This is where observation is of great value, combining the given circumstances, the observed and the *magic if*.

All of these components will combine to assist the actor to implement the *magic if* effectively, but it will mostly entail an external imagining of the senses. The actor must never forget that he relates to the external and experiences it internally.

iv. Communion or communication

Merlin (2003:47) explains that Stanislavsky gives *if* as a direct method of "arousing true feelings".[25] It is important for the actor to remember that he always has feelings and thoughts about situations, people and objects and needs to incorporate them in order to bring believability to a role; this means there has to be a relation to all surroundings (McGaw et al 2012:126–128). It is through this constant exchange of inner and outer actions or communion that an actor can keep an audience's focus on the events of the diegetic world (Stanislavsky 1973:197). According to McGaw et al (2012:125), this relation reveals the meaning and motivations behind actions toward different components.

This relation not only incorporates the communion between actors, but also between an actor and objects, and his surroundings or proposed surroundings, and even his clothes (Merlin 2007:171; McGaw et al 2012:125–128). According to Stanislavsky (1973:194) this relationship or communion never ceases. Communion is thus present within the space the actor is occupying, whether it is a normal set or green screen environment. Merlin (2010a:65; 2010b:21–22) posits that the environment is an important stimulant as it elicits a reaction and an emotion from within the actor. This author (Merlin 2010a:6) also argues the importance of the "dynamics of the space" and its influence on the choices made by actors, whether it is with the imagination or physical. Therefore communion with the space, even if it is imaginary,

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[25] Feelings that come across as congruent with the feelings called for in the scene.

is crucial to the actor's character and his choices. Stanislavski (2010:231) urges that communication can only occur when the object of communication is observed and yielded to. The challenge for the actor is thus not to yield to the communication with the green screen, but rather to imaginatively see, yield and communicate with the proposed surroundings of the diegetic world that will be added in postproduction.

Blair (2008:41) states that when the imagination is engaged it is important to continually nurture the relationship between the actor and the perceived object. When working with the *magic if* and green screen this communion is crucial as the actor will have to be in communion, not with the perceived green screen, but with the components that will supplant the green screen. As has been discussed in the previous chapter, the green screen can be substituted with anything, including objects, surroundings and even clothes, all for which the actor will have to define his communion. In *The presence of the actor*, Chaikin uses the image of a burning house to explain the importance of defining the actor's relation to something (Hulton 2010:168). In what way is the actor in communion with this burning house? Is he the owner, neighbour, witness, watching on television, a journalist (Hulton 2010:168)? All of this will have an impact on how the actor reacts, which is of great importance in green screen acting. McGaw (1966:107) argues that the actor must know what his relationship is to all the other components of the play, including the events, characters and the *mise-en-scène*. Although McGaw writes about modern theatre, the same principles can be applied to working in film and with green screen, as this study will demonstrate.

Stanislavsky (1973:202) argues that the actor should not only be in communion with physical objects and characters, but should be in continual communion with imaginary objects as well, for it is in this relation where the actor can honestly answer the question of '*if*'.

Hornby (1992:160) divides relating into two subsets, namely, relating to that which can be perceived as real and relating to which is imaginary. When speaking about relating to imaginary circumstances, Hornby (1992:160) states that these events may not physically happen, but need to be so ingrained and clear in the imagination that the spectators are completely convinced of their 'reality'. Hornby (1992:162) further

argues that relating to an imaginary environment, object or character is crucial to film acting, where scenes are shot out of order, talking to someone off camera not even there and watching scenes that unfold off camera. Hornby could easily have included green screen in his examples. The actor must give full details when relating to the given circumstances whether they are realistic or even non-realistic, such as when the actor is asked to look out of the window at people turning into rhinoceroses; he must be able to see it and describe each individual rhinoceros (Hornby 1992:162).

This concept of communion or relating will have an influence on how believable the acting will be towards an imaginary object in green screen acting, and will therefore influence *scenic faith*. Stanislavsky gives the example of actors playing opposite a ghost and states that it is not the ghost character or component that is important but the actor's relation, feeling or communion with it when asking "What would I do if a ghost appeared before me?" (Stanislavsky 1973:202; Stanislavski 2010:236–237). By knowing the relationship and incorporating it into the imagination, the appropriate emotion will surface. Merlin (2010b:185) posits that an emotion can only be present when the action takes place in conjunction with committed imagination. The communion will give feeling to the imaginative reality of the scene and from there the actor can accomplish the actions that are required of him in order to answer the question "What would I **do** *if* …?".

v. Actions

Stanislavski (2010:180) distinguishes between internal and external action and agrees with the mutual presence within each other. Both types of action are crucial to an actor working towards *scenic faith*. In working with film or television and green screen, the actor's actions are a crucial part of how the scene will come across. Baron and Carnicke (2008:1) posit that the actor's actions are as crucial to screen performance as any other filmic component. In film the actor's physical portrayal can be closely scrutinised by the audience and is therefore an important component (Baron & Carnicke 2008:60). Actions congruent with the diegetic world not seen by the actor while filming have to be concretely worked out. According to *Science of the movies* (2009d), the visual effects supervisor will usually be on set to make sure the actors' physical actions will work in the virtual world. Along with knowing the actions

in order to accomplish composition and lighting (Merlin 2010a:130), it is also important for visual effects. Stanislavski (2010:183) states the importance of "logic in action" within the green screen environment; where components influencing the action are added after filming, the logic needed for the action increases in stature. Thus, knowing what the actor will be physically doing is another important component.

This notion is also covered when using the *magic if* in the given circumstances. McGaw et al (2012:48) agree on the importance of discovering the character's physical actions in the proposed circumstances and implementing them. McGaw et al (2012:48) continue by claiming that this "may bring forth the desired feeling", since the physical and the emotional are connected and influence each other. However, the actor must focus on implementing the actions and not pursue the feeling as the feeling will be activated by the actions.

According to Stanislavski (2010:20), the inner realisations and experience achieved by the actor have to be physically portrayed. Therefore, the *magic if* and given circumstances develop out of inner stimulation into physical expression. Discovering rational solutions to the 'what if' question will persuade the actor to accept his actions as logical and therefore as truth and congruent with the imagined diegetic world (McGaw1966:10). These actions have to be correlated with the objectives of the character in the diegetic world as this will promote logic, motivation and *scenic faith*. The objective is the desire of the character and is achieved through physical actions (Merlin 2007:73, 134).

To become physical the actor requires an objective which needs to be specific (Krasner 2012:104–105). Having logic and motivation behind the actions of a scene also diminishes the separation between the physical and psychological and, therefore, promotes psychophysicality (Gordon 2006:49–51). Evgeni Vakhtangov, a student of Stanislavsky, called for justification rather than logic in action (Gordon 2006:59). The actor had to justify to himself the actions required in the scene, whether these actions are logical or not, this gives allowance to incorporate any type of scene (Gordon 2006:59) and he developed exercises to justify imaginary components (Gordon 2006:60). Stanislavski (2010:67) agrees with accepting the

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proposed *if* and justifying the imaginary life and actions.

Whether there is logic behind the justification or not, according to O'Brien (1983:130), justification is of great importance to the film actor, where the actor needs to justify and motivate every action. According to Merlin (2010a:129) the actor has to accept the actions and then justify them. Where the internal action of *if* and external physical actions need to synergise within the proposed circumstances to be logically congruent with the diegetic world created, justification plays a crucial role. The actor must be able to adapt to any required action (Merlin 2007:217). Green screen forms part of the behind-the-camera *mise-en-scène* of the 'unfilled' film frame that will be added later. Stanislavsky learnt an important lesson surrounding the *mise-en-scène* and the actors' justification of their actions within the scene when he realised that actors cannot find inner justification for their actions in a scene without making the *mise-en-scène* their own, no matter how imaginative the director's vision may be (Merlin 2003:15). Stanislavsky's realisation has great bearing on working with green screen when the actor has to take into account what the director is envisioning. There has to be consensus and understanding between the actor and director in the *mise-en-scène* in order for the actor to gain inner justification and *scenic faith*. Knowing which actions are required for congruency with the physical reality of the diegetic world and then justifying these actions with the assistance of the *magic if* will facilitate the actor in achieving *scenic faith*.

With so many components that the actor has to keep in mind when working and creating within the diegetic world it is important for the actor to focus his mind. This will require concentration and attention.

vi. Concentration and attention

The actor's concentration is very important as it contributes to all the components of the *magic if*. Stanislavsky (1967:429) observed that the entire being of the actor has to be in concentration, as the first step towards creativity and that concentration incorporates not only the imagination, but all of the actor's physical and mental abilities. Bowskill (1977:36) agrees that concentration can arouse the imagination.

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According to Chekhov (1983:135), it is vital for the actor to concentrate when working with images and the imagination as this assists the actor in fixing and controlling the images (Chekhov 1991:9). This is crucial when working in film, where concentration is needed on a set to stay in the imaginary moment created by the scene of the diegetic world and not be distracted by the crew and their equipment and all the components outside the imaginary world (Barr 1997:34–35; Gordon 2006:46). Concentration thus assists the actor to achieve the same goal as the *magic if*, by maintaining the actor within the imaginary world and achieving *scenic faith*. Carnicke (2009:215) describes the successful use of concentration as a component that promotes "public solitude", what Stanislavsky called the mental state (while concentrating), when the actor is cut off from everything outside the imaginary world of the scene, even though he is still seen by the public (McGaw et al 2012:122).

Stanislavski (2010:108) identifies inner (the mind) and outer (objects and events) concentration as key components to be exercised in order to retain focus on the character and the diegetic world. To promote attention, Stanislavski (2010:92) calls for immediate, mid and distant focal points, including interaction with the presumed objects which will elicit more attention. By applying the *magic if* to an object, enforcing it by the given circumstances and following a logical progression, concentration will be aided and interaction will ensue (Stanislavski 2010:110).

Another technique Stanislavsky used to achieve public solitude was to use "circles of attention", where the actor concentrates on objects within a small circle of the actor's imagination and broadens that circle as the play demands. This allows the actor to decrease the circle of attention when he feels he is shifting out of his imaginary world (McGaw et al 2012:122). Incorporating circles of attention increases the actor's concentration (Merlin 2010b:108). This technique does not have a single focal point, but rather an area with multiple objects which can receive attention without crossing the designated circle (Stanislavski 2010:98). This circle has the capacity to move (Stanislavski 2010:103–104). These circles of attention will assist the actor in absorbing and retaining the diegetic world.

According to Bowskill (1977:16) concentration can be followed by absorption (to lose

oneself in something else) which is what the actor should be striving for. This absorption into the imaginary world can be of importance to the actor working with green screen, but without concentration in a green screen environment the imaginary world or proposed circumstances will come crumbling down to reveal only green and nothing more. McGaw et al (2012:121) agree that concentration serves to help the actor channel his energies toward accomplishing the task or purpose at hand and not to be distracted, but also that it energises the actor's imagination.

vii. Relaxation

Relaxation is the process of ridding the body of unnecessary muscular tension that inhibits the creative process which leads to good acting (Carnicke 2009:223; Stanislavski 2010:120; Krasner 2012:24). It is a crucial component of most training programmes (Gordon 2006:46). Merlin (2010a:67) argues that relaxation is the beginning of training. According to McGaw et al (2012:22), if the actor has tension and is rigid while performing, it impedes mental processing, creativity and imagination. Tension and anxiety limit the actor's body in moving freely and disrupt the actor's thoughts (Gordon 2006:46; McGaw et al 2012:23). According to Merlin (2007:32) relaxation promotes the communication between the inner motive forces of psychophysicality. Therefore it is important to be relaxed while performing and trying to achieve *scenic faith*. If the actor's mental processes are interrupted while working with green screen because of tension, then he will not be able to concentrate and use the notion of the *magic if* to achieve *scenic faith* within the proposed circumstances.

Merlin (2010b:108) argues that it is important to combine psychological relaxation with an active imagination, which allows the actor to work creatively. It is thus important to have relaxation as part of the acting technique. Stanislavski (2010:122) asks the actor to breed a "tension observer" within the self, which will continually identify and eliminate excess tension. Stanislavsky (1973:99) states that his system works toward control by relaxing the muscles. Through continuous exercises relaxation will then become a habitual pattern which can assist the actor in maintaining a relaxed state that promotes ease and creativity in the green screen environment. Merlin (2007:69) argues that the actor should be effortless in adjusting

to the given circumstances when psychophysically relaxed. Such effortlessness is crucial for reacting according to the director's needs.

The breath helps promote relaxation, which in turn promotes the creative state in order for the actor to receive and be in communication with the environment (Merlin 2007:34; 2010a:40). Krasner (2012:21) argues for the importance of breath when the actor is "physically preparing" as it promotes psychophysicality. Zarrilli (2009:25) has constructed various exercises which promote psychophysicality; all of which begin and end with breath, as it aligns the mind and body. Tension is also released when the present purposeful action is fully justified in accordance with the *magic if* and given circumstances (Stanislavski 2010:128–130).

Lobdell (2000:181) argues that actors are in communication with "imaginary sensations" that spring forth from the proposed circumstances, but that tension inhibits the actor's ability to receive these sensations. If tension and strain can impede the reception of actual sensations in life, then it will impede the communication with imagined sensations in the scene even more (Lobdell 2000:181). Relaxation is thus a crucial component when using the *magic if*.

Imagination, sense memory, observation, communion, actions, concentration and relaxation are all workable components of the *magic if* that are necessary for achieving *scenic faith*. Gordon (2006:46) names relaxation, concentration and imagination as the first components that Stanislavsky regarded as crucial in cultivating a "creative state of mind", Gordon (2006:46) also names belief, but in this study belief or *scenic faith* comes through the use of all the components of the *magic if*. As single applications they will be insufficient in achieving *scenic faith* as the set goal of using the *magic if*. The actor's creative state is achieved when the inner motive force or inner psychological drives are working in unity, enthused by the *magic if* and all its components. This combination gives the actor the tools to achieve *scenic faith* within the proposed environment of the diegetic world and the possible use of green screen.

One final process Stanislavsky worked on before his death, which also incorporates the notion of the *magic if,* is active analysis.

3.2.5 Active analysis

Most scholars agree that active analysis emphasises an analysis of the script and character through action and improvisation and not just discussion (Carnicke 2009:190). It guides the actor into the diegetic world through somatic action (Kemp 2012:176). Accordingly, rehearsals would be conducted through improvisation within the given circumstance (Gordon 2006:51). This incorporated the psychophysical nature of Stanislavsky's work in that it engages both inner and outer action (Carnicke 2009:191). Although active analysis also uses the *magic if* and asks "What would I do if …" (Merlin 2003:35; Gordon 2006:54; Carnicke 2009:204), it also incorporates a collective *magic if* through collective cast improvisation (Carnicke 2009:195). Every time the cast improvises the action it triggers an honest emotion, allowing a reciprocal relationship within the psychophysical instrument of the actor (Merlin 2003:36-37). Carnicke (2009:195) states that this process allows the actor to not just mentally visualise a walk through the character's space, but also to walk through the rehearsal space and turn it into the character's space through improvisation. Gordon (2006:54) posits that the actors have to "visualize the scenic environment". Active analysis asks the actor to traverse, incorporate and relate to the imaginative diegetic world (Kemp 2012:147). Active analysis is effective as it makes use of the present moment, or what Stanislavsky called the "Here, Now, Today" (Merlin 2003:35). The improvisatory collective *if* and the conversion of acting space into the character's space could be applied to green screen acting if the cast already has a detailed understanding of the proposed surroundings. This could have been applied with the cast of *Alice in Wonderland* (Tim Burton 2010) where a complete virtual set was created and the actors had to work together with limited external stimuli, as discussed in chapter 2.

3.3 CONCLUSION

The concept of the *magic if* (in all it proposed uses) can be useful when working with green screen. Using the concept to elicit the imagination in conjunction with the given circumstances in a logical manner will assist and guide the actor to circumvent any issues that might arise. It is thus crucial to exercise this technique and its

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components for it will assist the actor to develop a more natural approach to this type of filming where the actor has limited or no external stimulus. Stanislavsky (1987:40) asks the actor to develop his imagination methodically every day in terms of the ideas required for the play, for then the given circumstances in the imaginative diegetic world will become habit. By practising "[m]y attitude towards them [complicated chain of circumstances] becomes a reality" (Stanislavsky 1987:40). The following quote from Stanislavsky is applicable to what the actor must keep in mind when working with green screen:

> We must have, first of all, an unbroken series of supposed circumstances … Secondly we must have a solid line of inner visions bound up with those circumstances … (Stanislavsky 1973:63).

The purpose of this chapter was to frame Konstantin Stanislavsky and his system, with specific reference to the notion of the *magic if* and how it can assist in circumventing the challenges an actor might face when working with green screen technology by achieving *scenic faith*. Through this literature review it becomes clear why Stanislavsky is still important today, how the *magic if* is applied and the components that make up its use. These components have a direct influence on how the actor will be able to cope with the challenge of green screen. It is these components that need to be trained and strengthened. The reason for doing this is to understand the *magic if* and its components so that it can be implemented in a viable way in green screen acting.

Merlin (2010a:7) maintains that art and science will always be connected. Since Konstantin Stanislavsky developed his system, there have been many other discoveries and advances in the way the mind works that will have bearing on his system. These discoveries could be used to validate his system, to develop his ideas further and to gain new perspectives on how to access the *magic if*. Carnicke (1999:84) quotes Pudovkin, who stated as early as 1955 that Stanislavsky's system and its techniques should not be applied to film or cinematography without evolving them for the technology that emerges from and forms part of the film world. Therefore, it is important to develop Stanislavsky's notion of the *magic if* in conjunction with discoveries in neuroscience while keeping the actor's challenges in

green screen filming in mind as a guide.

In the next chapter discoveries in cognitive neuroscience pertaining to this study will be discussed and delineated, focusing on the findings relating to imagery which will assist in understanding and accessing the notion of the *magic if*. The components of the *magic if* will further be considered in neuroscientific terms. This will assist in developing a technique for actors when working with green screen technology.

CHAPTER 4

A NEUROSCIENTIFIC FOUNDATION FOR ACTING

4.1 INTRODUCTION

The purpose of this chapter is to identify and discuss discoveries in cognitive neuroscience as they apply to the acting principles discussed in chapter 3. The chapter will discuss and demonstrate how current research in cognitive neuroscience enhances comprehension of the use of imagery and all its subsequent branches as they apply to green screen acting. It will contribute to the understanding, use and verification of the Stanislavsky system and, more specifically, the *magic if*. The strategy to be followed is a literature review that traces applicable developments in both the fields of cognitive neuroscience and acting. This will provide pointers for understanding how the *magic if* can be accessed during green screen acting and thus create an approach to assist the actor specifically with green screen acting.

In order to create the aforementioned approach, it is important to investigate fields pertinent to human functionality and behaviour which seemingly fall outside the field of acting itself, as acting reflects human life and as such draws directly or tangentially from these fields. Acting reflects human behaviour and owing to the relations between society and biology and the changes and discoveries in the scientific understanding of human behaviour, the need to revisit acting techniques in the light of the prevailing scientific view is created (Blair 2008:23). According to Lutterbie (2011:12), every individual has the same brain structure which essentially functions in the same way, although the brain information and its response to the environment might diverge as a result of the individual's experience. This allows for an acting strategy for the actor that is dependent on cognitive processes.

Chapter 3 discussed the way the Stanislavsky system guides the actor in the use of mind and body strategies to achieve *scenic faith*. Congruent with the overall aim of this study, discoveries which have bearing on the bodymind have to be viewed in the light of what they mean to the actor and existing acting strategies. Stanislavsky believed that the mind-body-spirit field can be activated through great acting

(Carnicke 2009:3). This belief supports and motivates the research into these selected fields. Moreover, Kogan (2010:xvi) states that for the actor as a "knowledge-seeker" it is important to find fresh knowledge and information but also to "constantly revisit established knowledge in the light of new findings". As such, this study seeks to integrate and apply existing and new knowledge regarding the *magic if* in conjunction with recent applicable findings in neuroscience.

Acknowledging the development of cognitive neuroscience applicable to acting provides the green screen actor with an opportunity to gain a deeper understanding of the bodymind processes. This then begs for application in the actor's process. Blair (2008:81), echoing Stanislavsky, who wanted an ever-evolving system based on principles, states that the research into cognitive neuroscience has many applications in acting. In the following discussion, I will be cognisant of Blair's (2008:6) caution to be mindful when applying neuroscience to acting, given the rapid developments that characterise research in neuroscience.

4.2 COGNITIVE NEUROSCIENCE

In order to understand the influence that the development of cognitive neuroscience has on acting, it is necessary to define the concept. Cognitive neuroscience consists of two separate but interrelated fields, namely, neuroscience and cognitive psychology. Kandel (2006:435) defines cognitive neuroscience as an amalgamation of the theories and practices of neuroscience and cognitive psychology:

4.2.1 What is neuroscience?

Neuroscience is the comprehension of the brain on a biological level, investigating and demonstrating how the brain's most fundamental units bring forth that which human beings conceive of as mind (Kandel, Jessell, Siegelbaum & Hudspeth 2013:[sp]). Neuroscientists focus on the inner mechanisms comprising the nervous system in order to understand and alleviate diseases connected with the nervous system (Rohkamm 2004:2; Bennett & Hacker 2013:1). The brain forms part of the nervous system along with the spinal cord (Angevine 2002:314).

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Research into the physical operation of the nervous system on a neural level can potentially assist the actor when applied to the mind–body principle as discussed in chapter 3. Such research could assist in understanding how the actor uses his mind in his craft.

4.2.2 What is cognitive psychology?

Cognitive psychology seeks to obtain comprehension on how human beings gain, use and act on information and how this information is characterised in the brain and mind (Kihlstrom & Park 2002:839). To understand this field, the idea of mind and cognition has to be made clear. According to Goldstein (2011:5), the mind creates and controls cognition in order to assist human beings to navigate successfully through their environment. Cognition encompasses the mental functions humans use every day to navigate through life. This includes "*perception, attention, memory, emotions, language, deciding, thinking and reasoning*" [emphasis in original] (Goldstein 2011:5).

Ward (2006:3) agrees with this definition and states that cognition implies "higher mental processes". Most experiments conducted in cognitive psychology are guided by behaviour and reaction (Goldstein 2011:15). Cognitive psychology supplies an understanding on how the mind works as it is used in the prevailing environment. The combination of neuroscience (neural level research) and cognitive psychology (the mind and its reaction to the environment) constitutes cognitive neuroscience.

4.2.3 What is cognitive neuroscience?

Drawing from the above, it is evident that cognitive neuroscience is a discipline that incorporates different fields to form a more complete view of the brain and its processes. Ward (2006:3) agrees that the discipline of cognitive neuroscience combines several studies that incorporate the mind processes and the brain itself. As such, cognitive neuroscience incorporates not only the brain, but the psychological aspects of the mind which, in turn, include memory and other facets of cognition (Bennett & Hacker 2013:1). Cognitive neuroscience researches how the "emotional and intellectual life grows out of our biology" (Blair 2008:4). It uses the information

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gathered from neural level brain studies and ascribes the information gathered to specific cognitive human reactions (Bennett & Hacker 2013:2).

At present there are various ways of studying the brain. These include "functional magnetic resonance imagery (fMRI), magnetoencephalography (MEG), and positron emission tomography (PET)" (Kemp 2012:156). Structural imaging has been used to gain a thorough picture of the brain's construction (Ward 2006:49). With the invention of functional magnetic resonance imagery (fMRI), neuroscientists gained the ability to see how the brain works by measuring the neural activity; in other words it provides pictures of mental processes or cognition (Blair 2008:11; Nataraja 2008:72). Functional images use the postulation that there are physical changes in the brain when activity is present and these changes can be used to observe the activity taking place during mental functioning (Ward 2006:49). With fMRI, the changes in blood oxygenation are traced through the use of neural activity images (Savoy 2002:327; Ward 2006:50). fMRI allowed research into the mapping of mental functions such as perception, attention and emotion to intensify (Savoy 2002:328), all of which are activities crucial to the actor and the creation of *scenic faith*. Thus, the information gathered by the research permitted by fMRI is beneficial to the actor's comprehension of his own processes. The images received from fMRI indicate that brain processes or mental functions are not located in just one part of the brain, but simultaneously in several areas.

In their book *History of cognitive neuroscience*, Bennett and Hacker (2013) distinguish between the following cognitive processes in relation to the cortex, which are researched in the field of cognitive neuroscience: perception and sensation, attention and awareness, memory, language, emotion and motor action. These mental processes correlate directly with what the actor has to access when working with green screen. In *The player's passion* by Joseph Roach (1993), Roach describes how, as far back as the Greeks and up to the twentieth century, the acting paradigms changed in line with the changing paradigms of science. The actor creates from himself and uses his body and mind as the canvas. This necessitates the need for the actor to comprehend the inner mechanisms and interrelationships between the body and mind.

Rhonda Blair (2008:3) discusses how cognitive neuroscience supplies insight into the way consciousness is connected to brain processes. This insight could possibly assist the actor in the understanding of acting processes or methods (Blair 2008:3). Kemp (2012:94) agrees that pragmatic neuroscientific investigations of behaviour can benefit acting principles and theory. Nataraja (2008:156) posits that control over unconscious behaviour can be obtained through conscious understanding. As the previous chapter indicates, Stanislavsky works through the conscious mind to assist the actor in his processes. Following this argument, understanding the conscious mind through knowledge of the processes of the brain will assist the actor in comprehending and controlling his conscious efforts. In order to understand the application of cognitive neuroscience to acting a basic understanding of the brain is thus necessary.

4.2.4 Overview of the brain

To design a potential system for the actor, knowledge of the areas, actions and responses of and in the brain needs to be acquired. Although the different regions of the brain function in harmony, simultaneously and in multimodality, it is still necessary to delineate the different areas and their purposes (Lutterbie 2011:81), because human thoughts, feelings and behaviours are all affected by the interaction and communication between these different areas and their pathways (Simpkins & Simpkins 2010:53). The brain can be divided into the following communicative regions: the cerebral hemispheres, the diencephalon, the cerebellum, the midbrain, the pons and the medulla oblongata (Angevine 2002:314).
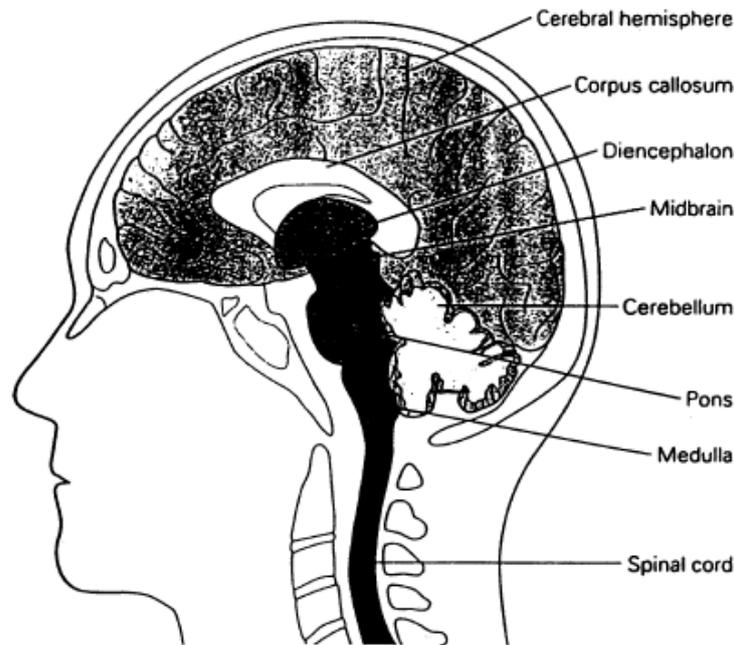
Figure 4.1: Midline view of the chief regions of the brain (Kandel, Schwartz & Jessell, in Filley 2002:404)

The most important area of the brain that is applicable to this study is the cerebral hemispheres. The cerebrum, which is made up of the cerebral hemispheres, has an outer layer called the cerebral cortex (Angevine 2002:319). The majority of the cortex consists of the surface area known as the neocortex (Filley 2002:418–419). According to Nataraja (2008:55), as well as Simpkins and Simpkins (2010:69), it is the cerebral cortex that is responsible for higher functioning, which includes memory, visual processing and imagination. Since these higher cognitive functions are directly applicable to the study, the cerebral cortex will be investigated in more detail. Simpkins and Simpkins (2010:69) state that "[c]onscious processing of sensory, motor, emotional, and cognitive functions passes through the cortex".

The cerebral cortex is divided into a left hemisphere and a right hemisphere (Ward 2006:25). Although the two hemispheres are similar and represent the same brain functions, the right is typically stronger in nonverbal, three-dimensional relations and universal thinking, while the left is usually stronger in verbal language, consciousness and logical thought (Angevine 2002:322-323). These hemispheres are connected by the corpus callosum (Gazzaniga 2002:31). The cerebral cortex is

further divided into four lobes, namely, the frontal, parietal, temporal and occipital lobes (Simpkins & Simpkins 2010:70). Each lobe exhibits traits that are incorporated when working with the *magic if*. Although each lobe can be divided into smaller regions, these are their basic functions:

- *Frontal lobe*. The frontal lobe is the largest lobe and is responsible for working memory and administrative action (Filley 2002:422). Located inside the prefrontal cortex is the cingulated gyrus, which is a subdivision of the frontal lobe and is concerned with attention, creativity and spontaneity (Simpkins & Simpkins 2010:72). The prefrontal cortex is also responsible for images, thoughts, daydreams and attention (Nataraja 2008:56), and executive function and control are also associated with the prefrontal cortex (Lutterbie 2011:109). The frontal lobe is therefore directly linked to the imaginative capabilities of the actor, including the control[26] of the imagination.

- *Parietal lobe*. This area has to do with sensory information from the body and its perception or cognition of sensation, as well as has the ability to assess and observe where the body is in relation to the world (Nataraja 2008:57; Simpkins & Simpkins 2010:73). With visual processing, the dorsal route which enters the parietal lobe is needed to detect items in the environment (Ward 2006:136). According to Filley (2002:422), this lobe houses the functions for physical senses, attention and spatial relations. Because the actor needs to envision himself in a certain environment when green screen is used, his perception and the way he relates to the space of this imaginative world are crucial.

- *Temporal lobe*. This lobe is involved in auditory information (Simpkins & Simpkins 2010:74) and is responsible for long-term memory (Nataraja 2008:58). The temporal lobe also includes the hippocampus and the amygdala, two regions forming part of the limbic system (Nataraja 2008:58). Both the hippocampus and the amygdala receive multisensory information and react to that information (Price 2002:696–698). The hippocampus is responsible for memory and spatial awareness (Price 2002:699; Ward

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[26] Reaction to "incoming perceptual stimuli" and managing deliberate actions (Lutterbie 2011:111).

2006:188; Nataraja 2008:61). Spatial awareness and memory are both crucial components (as discussed in chapter 3) when creating a detailed and successful diegetic world. The hippocampus is thus an important area for the actor within the temporal lobe. On the other hand, sensory input and the accompanying emotional content or strength of the input are determined by the amygdala (Filley 2002:416; Nataraja 2008:61). According to Nataraja (2008:61) the amygdala is associated with the hippocampus, the prefrontal cortex and the thalamus. Because the actor's emotional reaction to the imaginary scene is important in facilitating *scenic faith,* this substantiates the importance of the amygdala.

- *Occipital lobe.* This lobe is responsible for visual data and its processing (Filley 2002:422; Nataraja 2008:58; Simpkins & Simpkins 2010:75). Deyoe (2002:677) agrees with this statement and avers that it forms part of the back of the cortex. As the actor creates visual images, this lobe is crucial in establishing visual imagery. The occipital lobe is closely interrelated with other brain areas which include the temporal and the parietal lobes (Deyoe 2002:678).

The diencephalon consists of the thalamus, the hypothalamus, the subthalamus and the epithalamus (Filley 2002:413; Ward 2006:29). According to Angevine (2002:325), Filley (2002:414), Ward (2006:29) and Nataraja (2008:59), the thalamus communicates sensory information (apart from smell) between the senses and the cortex. It is also concerned with attention (Nataraja 2008:59). In the diencephalon, the thalamus, which acts as a relay centre for sensory information, is important for the actor because the sensory input in the green screen environment will be minimal. The hypothalamus is responsible for homeostasis[27] (Filley 2002:414–415; Mesulam 2002:473; Ward 2006:29).

The remaining areas, the cerebellum, the midbrain, the pons and the medulla oblongata, are crucial to the functioning of the human organism, yet not directly

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[27] Homeostasis refers to the "internal balance of key life functions such as temperature stability, energy usage, and nutrient intake" (Blakeslee & Blakeslee 2008:213).

applicable to this study and will therefore be discussed only briefly. The cerebellum is primarily responsible for movement (Angevine 2002:328). According to Filley (2002:411), the midbrain, the pons and the medulla oblongata together form the brain stem, which connects the spinal cord with the cerebrum and keeps the cerebellum fixed in position. According to Angevine (2002:327–331), the midbrain facilitates sight and sound, the pons connects and serves as a communicator between the cortex and cerebellum, and the medulla oblongata links the brain and the spinal cord.

A crucial system for the actor, in that it connects the different areas of the brain, is the limbic system. The most important structures of the limbic system are the hypothalamus,[28] the hippocampus and the amygdala[29] (Nataraja 2008:61). This is an important system as it is responsible for emotion, memory and behaviour (Rohkamm 2004:144; Nataraja 2008:61; Lutterbie 2011:82). It is also associated with and linked to various regions of the brain (Angevine 2002:324; Rohkamm 2004:144) and serves as an intermediary between the neocortex and the oldest brain structures in evolutionary terms (Lutterbie 2011:81). Based on experiential knowledge and the body's current needs, the limbic system reacts and interacts appropriately with the current surroundings and circumstances (Ward 2006:28). Limbic system activity may have a direct impact on the way the actor engages with his own experiences in order to navigate the green screen environment and the diegetic world. The limbic system also provides insight into how the different regions of the brain function in terms of multimodality and intercommunication.

Although each of these areas has specific qualities and functions, the brain is a multidirectional communicative entity. It is in a state of persistent change (Nataraja 2008:49), and persistent communication and activation takes place across various areas. McConachie (2008:27) and Carson (2010:45–46) agree that the brain has the ability to activate different brain regions for one mental function, owing to the neural pathways that connect the entire brain. This is known as the connectionist view (Kemp 2010:94; 2012:94) and the synchronised processing across the brain through

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[28] As indicated above, the hypothalamus is part of the diencephalon.
[29] As indicated above, the hippocampus and amygdala are part of the temporal lobe.

these connections is referred to as parallel processing (Ward 2006:8; Nataraja 2008:53).

i.   Neurons: the building blocks of the brain

Neural pathways are built up and connected by information processing neurons (Sajda 2002:373). A neuron is "[t]he fundamental unit of any nervous system … they have the unique ability to communicate rapidly with one another over great distances and with great precision" (Kandel 2006:443). Jerison (2002:252) and Nataraja 2008:48) state that all brains consist of neurons, and the function of each neuron are to read, manage and distribute information. The cerebral cortex houses an extensive collection of neurons (Cechetto & Topolovec 2002:663).

Neurons in the different areas of the brain have slightly different structures and functions, but the basic composition and characteristics of neurons remain the same (Angevine 2002:351). Each neuron consists of a cell body, an axon and dendrites (Filley 2002:405-406; Ward 2006:18). The cell body houses the cell nucleus which controls the operation of the cell and the calculation of information, the dendrites receive information from other neurons and the axon sends information to other neurons (Filley 2002:405-406; Martoni & Ellisman 2002:507; Ward 2006:18).
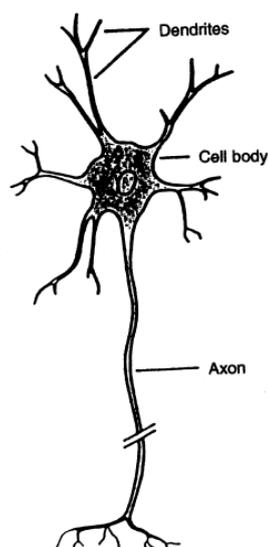

Figure 4.2: A typical neuron (Kandel et al in Filley 2002:405)

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According to Ward (2006:17) and Nataraja (2008:47) there are more than 100 billion neurons located in the brain. Damasio (2003:47; 2010:17) concurs and states that these neurons have trillions of connections. When a mental function occurs it causes an action potential, which is an electrical impulse responsible for the transmission of information between neurons (White 2002:1). These neurons produce proteins to send information from one neuron to the other through neurotransmitters along the synaptic cleft, which is the area between two neurons (Ward 2006:18–19; Damasio 2010:37).
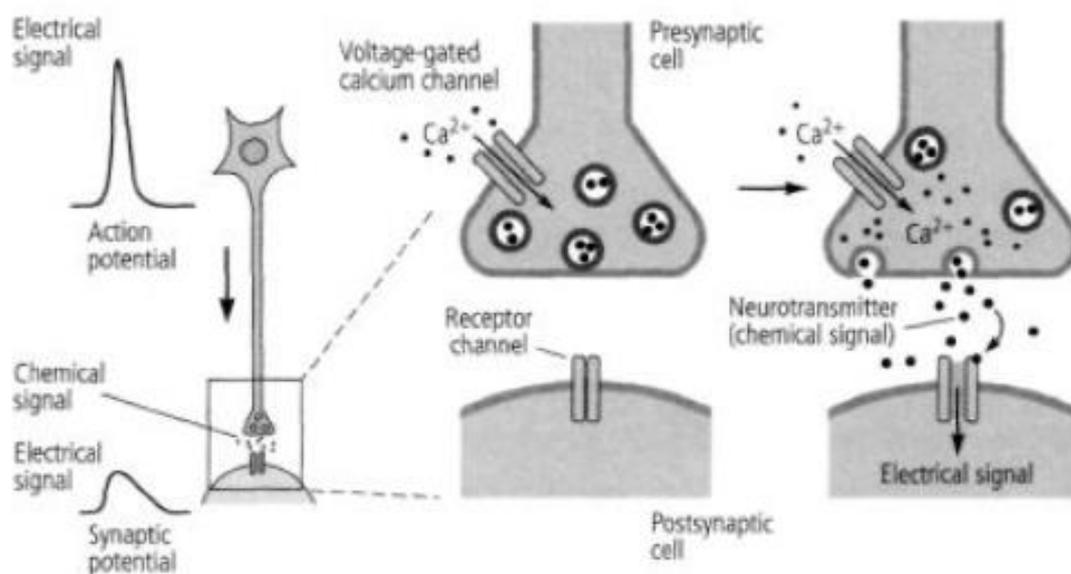
Figure 4.3: Neural information transmission (Kandel 2006:102)

The brain can activate or inhibit various pathways of neurons of variable strengths (McConachie 2008:26). Excitatory neurons (fire pathway) and inhibitory neurons (blocks pathway) function within the cortex (Nataraja 2008:48; Simpkins & Simpkins 2010:70). Neurons only fire as long as the currents are strong enough (Ward 2006:19). For a brain process to be clear, the signal or current through the neurons has to be powerful. Damasio (2010:18) posits that these neurons, which together create neural pathways, form "maps" and the brain constructs these maps to represent the world and the self. It is through the activation of these pathways or maps that the organism can operate in and navigate its environment successfully (Blair 2008:20).

Pathways can be strengthened or changed. Nataraja (2008:49) explains that the neural pathways are constantly being altered as a result of changes in experience and the environment. Ward (2006:177) and Kogan (2010:86) indicate that the term "neuronal plasticity" refers to the way in which the brain is constantly changing in accordance with experiences. This means that with each experience the brain literally changes. This activity is termed "neuroplasticity" (Blakeslee & Blakeslee 2008:56, 87).

Blair (2008:20) echoes this by explaining that the synapses[30] potentially change with every experience. According to Blakeslee and Blakeslee (2008:56), Pascal-Leone argues that with every deed done and every thought the brain changes. With each new experience that the brain tries to remember; "new connections sprout between cells and previously existing connections are strengthened". According to Simpkins and Simpkins (2010:77), neuroplasticity refers to the brain's ability to continuously reorganise the connections and pathways. Neurogenesis refers to the process by which new neurons are formed or created. Damasio (2010:66) argues that these changes in neurons change the pathways and keep the brain maps that are created in a shifting state. This 'plasticity' can be used by the actor to enhance, strengthen or create certain brain patterns or maps as needed. This can be accomplished by training, exercising and repetition of the imagination, memory and concentration maps. Nataraja (2008:62) concurs that the more a connection is activated the more it is strengthened. Kemp (2010:95) posits that, with repetition, neural network connections become established.

The conscious activation of specific brain patterns can be practised, developed and improved (Carson 2010:4). Therefore, the practice of a certain facet can literally change the brain on a neural level. Simpkins and Simpkins (2010:103) state that cognitive therapy has revealed that deliberate mental involvement can change the physical structure of the brain. The notion of plasticity confirms the statements offered earlier that imagination can be strengthened. This notion provides motivation for the development of a technique based on the *magic if* in conjunction with green screen technology. It demonstrates that the actor will be able to learn and master

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[30] The synapse is the specific area between two neurons where communication takes place (Kandel 2006:450).

such a technique and, as a result of the brain's plasticity, he will potentially reach a stage of effective functioning.

The principles of the Stanislavsky system and Stanislavsky's notion of the *magic if* rely on the actor reaching the subconscious through conscious efforts. Imagination and sense memory are conscious efforts by the actor to create a picture which, in working with green screen, has to be congruent with the filmmaker's visualised picture. It is therefore vital to understand how consciousness works.

ii.   Consciousness

Blair (2008:21), in referring to Edelman and Tononi's book *A universe of consciousness: how matter becomes imagination*, argues that higher brain functions, which include consciousness, are not only habituated by relations with the world and other people but actually need these communications. The mind is therefore a result of factors both outside and inside the human organism. This statement links up with Stanislavsky's notion of communion, as discussed in chapter 3, where the actor is in continual communication with his environment, which is a necessity when accessing the *magic if*. This is also important in green screen acting, which is about that which is (not) outside the actor, and how the actor relates to it. Kogan (2010:90) argues that consciousness, a crucial component for characterisation, is influenced by non-biological occurrences such as the forms of communication taking place, the culture and the milieu. All of these factors need to be present (albeit in the sense memory or *magic if*) for the green screen actor.

Although consciousness arises out of neural processes, there are three assumptions at play here (Blair 2008:21). Two of these assumptions have implications for the actor. The first is the "physics assumption", which states that consciousness arises solely out of the brain and its physical processes and, therefore, mind–body dualism is unnecessary and impossible (Blair 2008:21). This assumption gives the actor enlightenment in terms of the notion that the body and mind are one and that all processes can be understood by knowing how the processes of the brain work.

The second assumption is the "qualia assumption" which states that, because science is intersubjective and consciousness is subjective, science cannot fully communicate or translate certain aspects of consciousness (Blair 2008:21).[31] This assumption assists the actor to remember that consciousness is unique to each person. One human being perceives, experiences and feels differently to another human and can never truly know how these components affect another person (Blair 2008:21; Damasio 2010:157). This is why it is so difficult to communicate the process and experience of acting (Blair 2008:21). Yet, certain attributes and terminology of consciousness share in the system's terminology and this gives the actor the opportunity to connect the science with the components of acting and character (Blair 2008:60).

Damasio (2010:168–169) mentions an extended consciousness which involves both the history and the predicted future of the human organism while a particular event is occurring. According to Blair (2008:65), the extended consciousness resides in the neocortex which, in evolutionary terms, can be considered one of the younger areas of the brain. Blair (2008:66) argues that this extended consciousness assures the actor's ability to use the personal images of himself and the world he deals with, to manipulate these images and, in accordance with the given circumstances, bring forth creativity and imagination in the acting moment. In consciousness a correlation can be made between the physical process of traversing life's circumstances and the process the actor accesses to engage physically with the circumstances of the scene as they pertain to the character (Blair 2008:64). According to Kemp (2012:108), most of the processes of the self, functions within the subconscious and, therefore, the 'I', as discussed in chapter 3, cannot possibly be consciously connected to a character. They are rather a symbolic manifestation of the inversion of beliefs between actor and character (Kemp 2012:129).

The autobiographical self is found in extended consciousness. Damasio (2010:181) describes the autobiographical self as numerous objects or events recalled from the

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[31] The discovery of mirror neurons explained how we can empathise with each other. These neurons allow the observer to mirror in his own brain the actions that he perceives taking place (Lutterbie 2011:78). Therefore, the observer can understand the actions (Keysers & Fadiga 2009:193) and emotions of others because perceiving activates the same regions of the brain as the actual experience (Keysers & Fadiga 2009:195–196).

past or an imagined future that interact with the self and produce a relationship with the self. The autobiographical self is what the actor needs to activate in order, as Blair (2008:66) states, to produce personal images from the recalled past and the imagined future. This will assist him in navigating through the imagined environment and establishing interaction and relationships with the diegetic world. Damasio (2003:184; 2010:157) argues that consciousness is a process within the mind that makes the organism aware of its own existence as well as the existence of its surroundings. Therefore consciousness uses perception to understand the world.

In cognitive neuroscience there are a few concepts of importance when working with perception and, consequently, with the *magic if* and green screen technology. These concepts are proprioception, interoception and exteroception. Proprioception is the ability of the body to detect where its various limbs and parts are in relation to the physical space and their physical movement (Blakeslee & Blakeslee 2008:214). According to Kemp (2010:121), proprioception is obtained through sensory information obtained from the physical body which is sent to the brain via the spinal cord. This allows the human organism to learn and execute certain movements which later do not need conscious command. Proprioception is an important facet for the actor when assessing the green screen space and his own movements within that space. By reacting to "behavioral action", proprioception assists the actor in achieving a dissimilar "sense of self" (Kemp 2012:153).

Interoception, on the other hand, refers to "the ability to read and interpret sensations arising from the viscera and internal tissues of the body" (Blakeslee & Blakeslee 2008:213). It comprises the intricate existing brain maps and the mapping of the internal organs (Damasio 2010:97). Interoception is also responsible for the felt aspect of perceived emotions.

Finally, exteroception is "the ability to perceive the world outside the self through vision, hearing, smell, touch, and voluntary movement" (Blakeslee & Blakeslee 2008:212). Exteroception includes the brain maps of physical movement (Damasio 2010:97). This is underscored by Zarrilli (2009:51) who agrees that exteroception is about the physical body. Damasio (2010:39) states that interaction with the world continually alters the sensory input and these changes are mapped and represented

in the brain. Accordingly, the challenge to the actor is to activate or alter his brain maps by perceiving the make-believe world of the green screen through imagination and sense memory. These components, exteroception, proprioception and interoception, are all active when shaping perception, which is crucial for the actor working on his role in the green screen environment.

Blair (2008:4) maintains that, in cognitive neuroscience, an "acting-targeted knowledge" improves the use of acting terminology and toolsets for the actor (Blair 2008:4). Hence, understanding the brain's processes can be of great value to the actor. Kogan (2010:42) defines an "acting technique" as the deliberate use of "usually unaware thinking processes". An understanding and awareness of how the brain processes work, in accordance with the strategies the actor uses, will benefit the cognition of and creativity in acting. Furthermore, it will aid to develop an acting terminology that is less personalised, since the terminology will be borne out of the biological and psychophysical factors that are present in all actors (Blair 2008:4). These mental processes are determined by studies which are supported by research and readings on brain functioning.

4.3 STRATEGIES USED BY THE STANISLAVSKY SYSTEM AS DEFINED BY COGNITIVE NEUROSCIENCE

If the actor wants to apply current cognitive neuroscience knowledge in his preparation and techniques, he has to comprehend how the acting principles are defined by cognitive neuroscience. Therefore it is imperative to re-examine the *magic if* and its components, as discussed in chapter 3, in light of cognitive neuroscientific descriptions.

4.3.1 *Magic If*

An important term in cognitive neuroscience, closely associated with Stanislavsky's *magic if*, is the "as-if" body states (Blair 2008:79). Damasio (1999:118) writes that research has shown that the brain's body-sensing processes and areas mirror not just real physical body states, but can also produce and deal with "false" body states. This variant on mirror neurons and imaginary processing allows the brain to

temporarily construct a false body state that is not congruent with reality, which permits the human organism to experience the constructed body state instead of the real body state (Damasio 2003:116). The actor uses these states to embody the imaginary character and his given circumstances "as-if" they were real. Through these "as-if" body states or brain processes the somatic marker can still elicit related feelings even though the present body is not in a similar state (Ward 2006:321). These states are imaginary body states and the actor constructs them from his own somatic experiences (Blair 2008:79). Damasio (2010:102–103) argues that a human experiences the false body state because the perception of body states is ingrained in the maps found in the "somatosensing regions", and it engages somatomotor regions which facilitate action. These "as-if"' body states are fundamental and they substantiate the use of the notion of the *magic if* by the actor as part of his approach when circumventing the challenges posed by the green screen environment.

As the research stated above demonstrates, the *magic if* uses certain components determined by neuroscience which assist the actor to create, for himself, the imaginary world demanded by the scene.

i. Imagination

The imagination incorporates the mind–body paradigm as it connects both abstract thought and sensation (Kaag 2009:184). According to Blair (2008:26), imagination and action are important components found throughout Stanislavsky-based acting approaches. Imagination can also be viewed as the key component connecting the field of cognitive neuroscience and acting (Blair 2008:41). Damasio (2010:149) defines imagination as the method of recalling and manipulating visual pictures. This process of imagination can be associated with the techniques of compositing, as described in chapter 2, where the image can be altered according to the desired end result.

Studies have shown that visual perception and imagery are similar in the brain processes and that mental imagery makes use of the primary visual cortex (Ward 2006:125; Damasio 2010:149–150). The primary visual cortex or striate cortex is

situated in the occipital lobe (Deyoe 2002:678). According to Shapley and Rubin (2002:719), as well as Purves, Augustine, Fitzpatrick, Hall, LaMantia, McNamara and Williams (2004:259), the primary visual cortex receives visual information from the retina through the dorsal lateral geniculate nucleus in the thalamus. Owing to parallel processing, different visual areas of the brain, which include areas within the parietal, temporal, frontal and occipital lobes, are activated depending on the type of visual information (Rosa 2002:754; Shapley & Rubin 2002:719; Purves et al 2004:259). The areas where the information will be processed depends on a variety of components which include motion and object recognition (Purves et al 2004:259), faces and places (Kreiman, Koch & Fried 2000:360) and colour (Shapley & Rubin 2002:719).

In an experiment conducted by Kreiman et al (2000:357–358), the researchers found a preponderance of correspondence between the neurons firing for visual stimuli and imaginary recall of the stimuli. They discovered that neurons in different regions, including the hippocampus and the amygdala, altered their firing based on the imaginary object (Kreiman et al 2000:357). This would suggest that just as the areas activated during physical visual processing depend on the visual stimuli, the areas activated during visual recall depend on the object or scene being imagined (Deyoe 2002:709).

Kreiman et al (2000:360) suggest that the neurons firing during the recall of an image within the medial temporal lobe, an area crucial to explicit memory, could suggest the firing of these neurons during stimuli storage. These neurons or the created pathway is then reactivated during the retrieval of the imagery from memory in order to reconstruct the image in the imagination (Kreiman et al 2000:360). This substantiates the statement by Blakeslee and Blakeslee (2008:59), which proposes that these visual or mental images use the same brain areas involved in visual sensory input and construct these images out of visual memories.

Ward (2006:125) proposes that even though the same processes are used when imaginary images are created; the imagination activates the visual process patterns in reverse order. This corresponds with the "top-down interactions between prefrontal and temporal cortex during recall" (Kreiman et al 2000:360). Having

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approximately the same neural patterns firing for visual stimuli and imagination assists the actor in applying his imagination to create *scenic faith*. These mental images affect his behaviour and reactions in line with the reality of the scene.

Mental imagery is a process that activates the areas of the brain used in perception (Carson 2010:107) and, with sensory information, sensory images can be formed that are so vivid and clear that they can affect a person's actions (Carson 2010:108). Epstein (1989:13) agrees with the validity of these images and states that they can affect people just as much as reality and its corresponding emotions can. For the actor's actions to be influenced, he needs to exercise his imagination to the extent of having vivid mental pictures that will activate the same neural maps as the actual visual stimuli.

True to the notion of neural plasticity, Carson (2010:108) states that a person can enhance his capacity to imagine. To have vivid imagery is crucial for the actor and, according to Kulpe's hypothesis (Kunzendorf 1991b:150), it is the capacity to imagine vividly that allows the creation of "sensory images of their imageless memories". To experience imagery is to experience the corresponding event for real (Klinger in Smith 1991:216). Carson (2010:109) posits that different areas of the brain are activated when 'seeing' a still image in the mind's eye and when the scene or object is manipulated. It is therefore crucial to exercise both the seeing and the manipulating of images and thereby strengthen the various brain regions (Carson 2010:109). According to Kaag (2009:194) and Kemp (2012:142), Gallese's work on mirror neurons suggests the activation and correlation of similar neural patterns for executing or imagining an action. Movement and action in the imagination and the strengthening of the associated synapses are thus necessary. These concepts are crucial for constructing and understanding imagery and its ability to assist in accessing the *magic if*.

Kemp (2010:136) warns against "verbal overshadowing" when working with the imagination. Verbal overshadowing refers to the verbalisation of a memory or imaginative portrait which hinders imaginative reactions to the diegetic world due to "word-based, largely conscious thinking" (Kemp 2010:136; 2012:144). Therefore, the verbalisation of the created diegetic world may need to be kept to a minimum so as

not to impede the actor's unconscious responses. This is specifically relevant to the fast-paced world of filmmaking and television where there is not always time to allow for the actor's unconscious processes to occur organically and thus verbal overshadowing can impede an actor even more. This demonstrates the importance of a storyboard, as discussed in chapter 2, as this will allow the director to convey the diegetic world as visual stimuli with minimum verbalisation.

As a component of consciousness, imagination is concerned with practical results and is very important to the survival of the human organism (Blair 2008:62). Imagination allows humans to creatively navigate their changing situations and environments (Kaag 2009:184). This notion is echoed by Damasio (1999:30–31) when he argues that consciousness starts with the organism realising there is life and that it is continuously changed as a result of outside stimuli. The organism imagines itself in relation to something, which causes a reaction and through this reaction changes occur within the organism (Blair 2008:63). As the brain developed through the millennia it linked the "world of homeostasis" to the "world of imagination" (Blair 2008:62).

The incorporation of multiple brain systems simultaneously will promote an improved connection between the actor's bodymind. Blair (2008:69) explains that the "more neurochemically engaged you are as an actor, in terms of sensory and imaginative givens", the more the actor will be able to connect and discover the scene and incorporate it in his body. The actor, through the use of the senses, activates his imagination (Blair 2008:62). This is supported by Carson (2010:108) when she posits that imaginary sensory input activates similar areas of the brain as real sensory input activates. What is of importance to the actor is that these areas cannot distinguish between real or imagined sensory input and can even influence one's actions (Carson 2010:108). The brain's inability to distinguish is an advantage for the actor in trying to create an imaginary world and believing in it.

According to experiments conducted by Jackson, Brunet, Meltzoff and Decety (2005:758), the imagination of painful events activates the "pain-related neural network"; furthermore, the imagination of oneself involved with pain activates this

network more extensively than imagining someone else. This substantiates the hypothesis that the actor has to approach his imagination through active imagination in order to activate additional neural patterns to, in turn, create *scenic faith*. In these experiments the self-perspective stimulates regions associated with emotional and physical features of pain, including an area associated with the recall of episodic memory (Jackson et al 2005:758–760).

Imagination is used in conjunction with memories in order to create a picture. A mental picture thus incorporates past sensory experiences.

ii. Sense memory

Kandel (2006:441) defines memory as a mental process in terms of which the brain learns by experience and knowledge, storing the knowledge to be recalled when needed. Memory can be seen as the brain creating and storing sensory maps which can later be replayed close to the original memory. This is known as recall (Damasio 2010:136). The term 'recollection' is used when remembering something definite (Ward 2006:191).

In neuroscience, memory is associated with learning, because it is the physical creation of active neural pathways, as well as the reactivation of those pathways (Blair 2008:20). Carson (2010:42) concurs that learning can create new pathways and synaptic connections which physically change the brain. When these changes become enduring, it is known as consolidation (Kandel 2006:210; Ward 2006:186). Blair (2008:20) states that each memory has a different synaptic pattern or pathway that is activated and reactivated. Through the reactivation of these neural pathways, humans retrieve the necessary memory.

According to Carson (2010:42) different brain areas store different categories of information; therefore a single memory with all its information is stored in a number of different brain areas. Yet the information remains connected through the neural pathway which activates the entire pattern when recalling a memory (Carson 2010:42). According to Ward (2006:181) and Simpkins and Simpkins (2010:146), deliberately recalled memories are known as explicit or declarative memory, which

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incorporates episodic (personal events) and semantic (world knowledge) memories. According to Kandel (2006:130), declarative memory is kept in the prefrontal cortex until it is converted or consolidated by the hippocampus into long-term memory, storing the information separately in the sensory areas responsible for managing the initial incoming stimuli. Ward (2006:188) and Simpkins and Simpkins (2010:66) agree that it is the hippocampus area that is responsible for the consolidation of memories.

Explicit Memory Storage
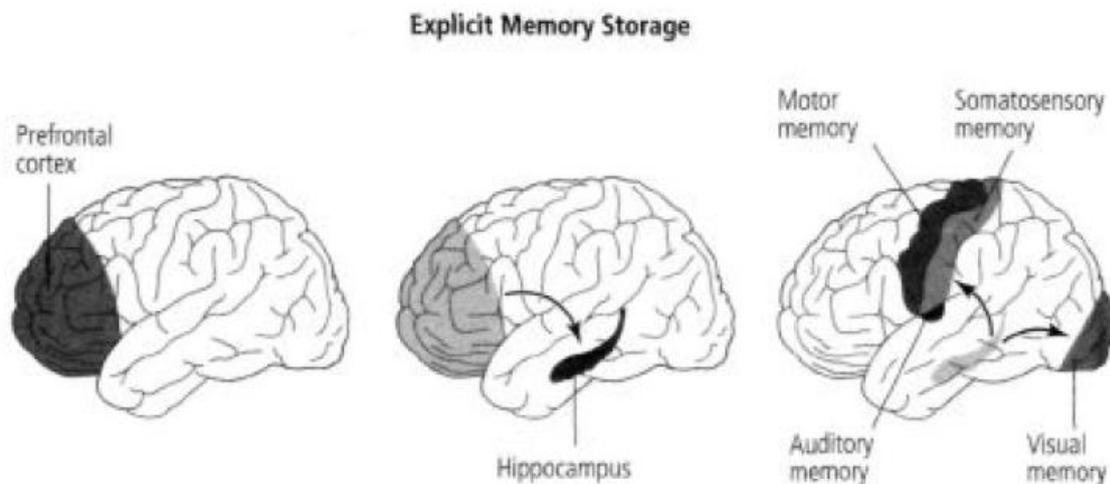
Figure 4.4: Explicit memory storage (Kandel 2006:130)

The connection of explicit memories by neural pathways through various brain regions gives impetus to the actor to construct a scene vividly using all his senses. The memories connected through these multiple sensory maps or pathways can be reactivated and applied to the specific imagined environment. For the actor to create *scenic faith* it is crucial to replicate, as closely as possible, the activation of the same neural patterns that would have been activated had the environment been real. This will facilitate the activation of multiple brain regions which will assist in the actor's belief in the diegetic world.

According to Damasio (2010:111) an image, whether from memory or imagination, will "initiate a chain of events". Each time a memory is reformed or recollected there are small changes in the pattern that is reactivated because of new experiences and the production of proteins to assist the remembering (Blair 2008:73). The actor must thus keep in mind that a recalled memory may be unreliable and untrustworthy (Blair

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2008:72). Every time a memory is retrieved the neural patterns change, even though it may be on a minute scale (Blair 2008:73). It is because of this that a precise memory does not exist (Damasio 2010:136). Because of the changes in the memory patterns at the time of retrieval there is a partnership between imagination and memory, whether it is episodic memory or sense memory; accordingly LeDoux (2002:177) states that memory is "an imaginative reconstruction". In using memory, one is invariably using different components such as imagination, past experiences and present state in combination to create an original experience (Blair 2008:74). Memory retrieval is a "focussed 'imagining' that activates selective visceral, sensorimotor, and semantic schemas" (Blair 2008:75). This gives the actor the freedom not to focus on an exact factual recall of an event or sense, but rather to incorporate his imagination and to live in the 'moment' and be experiencing while using past experiences.

The actor can revisit his memories in conjunction with his imagination to strengthen the neural patterns connected with those specific experiences. Carson (2010:42) states that the more a person recalls these memories, the more the person will strengthen and speed up the connections. Lutterbie (2011:98,106–107) concurs with this, stating that the more the synaptic associations with the memory are formed, the more durable the memory will be. Studies have shown that confusion can occur when trying to remember if something was actual or imagined (Ward 2006:196), which provides impetus for the actor living in the diegetic world.

Another form of memory, implicit memory, is associated with the learning of habits and skills that do not need to be consciously recalled (Kandel 2006:132). According to Kandel (2006:130) these memories are located in the amygdala, the striatum and the cerebellum.

Implicit Memory Storage
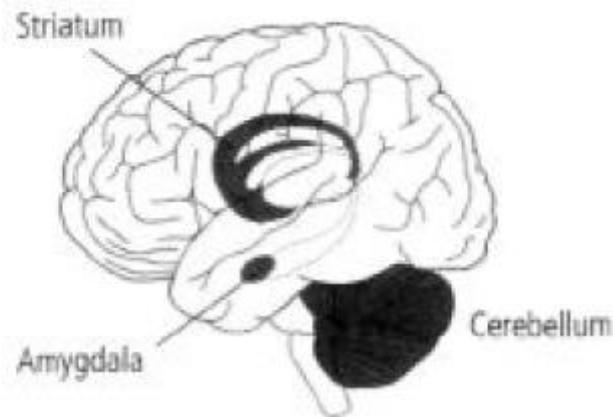
Figure 4.5: Implicit memory storage (Kandel 2006:130)

Kaag (2009:194) describes the experiments of Kohler which found that in the mirror neuron system it is not just visual perception but also sound that activates the neural patterns associated with the corresponding action – as a monkey perceives the sound of a peanut breaking, the neural maps involved in the action of breaking a peanut are activated. Since imagined or recalled stimuli activate the same type of patterns as real external stimuli, it can be hypothesised that the imagined or recalled stimuli can similarly activate the neural maps of the corresponding actions. Damasio (2010:133; 204) posits that each time an object is recalled from memory it incorporates not just the senses, but also the physical interaction with that object. Therefore, a recollection will not only activate the maps concerned with the senses in terms of the specific object, but also the maps concerned with the motor activities of the object. Damasio (2010:139) argues that the greater the sensorimotor content, the more intricate the memory. Therefore, imagination and recall are not efficient unless the actor is in personal communion or interaction with the imaginative recall, which will elevate the sensorimotor content. This will assist the actor in activating more neural pathways and to initiate the proper physical reactions to the proposed environment.

As described in section, communion is a key component when using the *magic if*. Cognitive neuroscience describes communion as a key function of the brain. This

function will be discussed below.

iii.   Communion

Damasio (1999:bookjacket; 2010:188) states that it is in the relationship between an external object and the organism that consciousness surfaces to portray "the living organism in the act of relating to an object". According to Simpkins and Simpkins (2010:44) the moment an organism engages with an object, that organism is in a relationship with that object. This can be physical or mental. When an object or subject is physically interacted with, the brain maps that object or subject as an extended part of the physical body (Blakeslee & Blakeslee 2008:3–4). Whether the engagement with the environment is physical or mental there remains a relationship between the organism and the environment. This key function in relating to an object or milieu could be seen to justify the *magic if* and the importance of the actor to relate to the given circumstances. The awareness of reacting to the environment or given circumstances is part of consciousness (Blair 2008:61).

Relating to an object or event elicits a physical and/or emotional reaction. Damasio (2003:53) states that after an object or event (real or in memory) is detected by the brain, a specific neural pattern is activated which triggers an automatic emotional response determined by evolution, experience and survival. By communion and relating with the external environment the actor can produce the desired physical and emotional responses. The following regions of the brain are the best known for in triggering emotions; the amygdala, the temporal lobe, the ventromedial prefrontal cortex, and the cingulated and supplementary motor area (Damasio 2003:59). The hypothalamus and the basal forebrain are acknowledged as parts of the brain that execute emotions (Damasio 2003:62). As discussed in section 4.2.4, these regions form part of the limbic system which is responsible for emotion as well as memory and behaviour. These components are crucial in establishing communion with an object or environment and then reacting to it.

Another term used in cognitive neuroscience applicable here is affordances. According to Blakeslee and Blakeslee (2008:106), Gibson argues that the environment is perceived according to the conceivable interactive behaviour

connected with it; thus as affordances. These affordances enable the required movements as per experience, for example a ladder affords climbing (Blakeslee & Blakeslee 2008:106).

This notion of affordance provides another strategy the actor can incorporate in his communion with his surroundings, especially when working with green screen. The neural connections for using tools correctly and for perceiving are situated in the frontal lobe and parietal lobe (Blakeslee & Blakeslee 2008:107). Zarrilli (2009:49) confirms this when he writes[32] how, in an environment, an animal perceives that which is afforded by the environment, in other words, that which the environment offers. Affordances are important for the actor, as each affordance is subjective and each person or creature will perceive the potential of interacting with the environment or objects in diverse ways. In chapter 3, the importance of an actor's continual thoughts, feelings and reactions to external objects and the environment within the green screen was discussed. Affordances can assist in establishing and defining the thoughts and reactions that will promote a more detailed envisioned environment.

Damasio (2003:49) posits that a reaction, whether it be a physical reaction or an emotional reaction, is always toward external objects (real, imaginative or from memory). While utilising green screen technology, the imagination has to define the external objects. This will assist in the communion with and the reaction to the outside world. In order to be in communion with the external world, attention must be given to a certain object.

iv.   Concentration and attention

The ability of the organism to experience the environment is part of consciousness. Therefore, as McConachie (2008:25) posits, attention is part of consciousness. In neuroscience terms, the term 'attention' is specific in that it allows the organism to prioritise the importance of what it needs and what necessarily needs to be dealt with first (Blair 2008:61). Through this process of prioritisation attention connects to the essentials in the environment. According to Vecera and Luck (2002:269) there are

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[32] About Noë's argument

multiple incoming stimuli from the environment and attention is the ability of the organism to decide which stimuli are relevant and must be received by the organism and which stimuli need to be sifted out. Ward (2006:130) supports this by saying that attention is needed to decide what information is necessary and what information is not in order for the mind not to be overwhelmed.

Ward (2006:107) suggests that attention and concentration use much of the capability of the human organism to take in information at a specific moment. There is a limit to the amount of information that can be absorbed at a specific moment (Ward 2006:107). What this means for the actor is that it allows him to direct his imagination and action to the priorities of a scene (Blair 2008:61). In addition, attention assists the actor in filtering out unnecessary stimuli that might distract him from the diegetic world, such as the crew and equipment used in film. It is possible to be unaware of visual changes within an environment if the "reflexive systems" responsible for the redistribution of attention fail to function at the specific moment of the change (Deyoe 2002:711–712). This is known as change blindness or "inattentional blindness" (Ward 2006:107). Therefore, the training of attention is important as it facilitates control over cognition, behaviour, emotion and body (Simpkins & Simpkins 2010:119).

Vecera and Luck (2002:270) posit two distinct categories that affect attention control; these are based on top-down[33] and bottom-up[34] sources. The first suggests that "behavioral goals" will affect the control of attention, and the second suggests that sensory input from the environment affects attention control (Vecera & Luck 2002:270). Bennett and Hacker (2013:67) cite Critchley who states that through years of research it has become apparent that visual attention is considered a procedure performed by neurons in the posterior parietal lobe. This conclusion has been substantiated by the fact that damage to either side of the parietal lobe will diminish the capacity of a subject to be aware of a stimulus on the opposite side of the damaged parietal hemisphere, unless the subject is made aware of this stimulus (Bennett & Hacker 2013:67). The most important area associated with spatial

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[33] Top-down refers to the strategy of taking a component or idea and working towards its specificity or basic parts (Trochim 2006).
[34] Bottom-up refers to the strategy of building up from specificity to a new encompassing component

attention lies in the parietal lobe, although top-down control is situated in the frontal area (Vecera & Luck 2002:271–272). The actor will apply top-down control and behavioural goals as his attention cannot depend on the limited sensory stimuli available when working in a green screen environment.

Further, for recollection to occur, attention is needed to ensure the retention of declarative memory (Kandel 2006:311; Simpkins & Simpkins 2010:146). Retention and recollection are crucial to the actor in utilising observation. Therefore attention and observation are integrally connected.

Ward (2006:130) elucidates that attention and the focus point of the eye do have the inclination to operate together and a person can "think about attention in terms of a spotlight". McConachie (2008:24) concurs by describing attention as a follow-spot and Nataraja (2008:95) argues that neurons within the thalamus work in much the same way as a searchlight. For the actor these examples can be linked to Stanislavsky's teachings on concentration and "circles of attention". When attention is required over a longer period it is called "sustained attention" (Ward 2006:296). According to Kandel (2006:312) attention is a necessity in learning and stabilising the spatial map. This indicates that when attention is focused on a specific environment or space like a searchlight, the spatial map of that area will become prolonged and will assist the actor in navigating the environment.

Attention within the green screen environment is crucial as the actor has to create a diegetic world for himself and sustain it. Visual attention is the ability to decide upon and sustain attentiveness to the selected components within a physical or imagined environment (Deyoe 2002:709). All variations of attention, which include "awareness, concentration, consciousness and noticing", require that there is an entity toward which these attentions are focused (Bennett & Hacker 2013:44). McConachie (2008:28) posits that by conscious effort being paid to attention, numerous realities can be processed. Attention can also elicit responses from the neurons situated in the visual cortex (Deyoe 2002:712). This may indicate that visual attention toward an imaginative scene may allow the actor to use his imagination more concretely.

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from specificity and basic parts (Trochim 2006).

v. Observation

As discussed in chapter 3, observation is a necessity for the actor in order to supplement the imagination with experience. According to Lutterbie (2011:100), it is the observation or awareness of life that provides the required experiences to respond efficiently to situations. This responsiveness is crucial when the situations are being imagined.

The concept of neural re-entry may indicate the importance of observation. This process, as described by Edelman (in Kaag 2009:196 and Lutterbie 2011:110), continually facilitates the neural maps of past experiences (relevant to the situation) in coordination with fostering new neural maps (influenced by the previous maps) as experienced within the occurring environment. The neural maps of past experiences (including observations) influence the actions and reactions of the actor in the present conditions. The parallel communicative processes of different maps and areas are demonstrated by the corpus callosum, which connects the two hemispheres with "reciprocal fibres" (Kaag 2009:197–198). Observation is therefore essential in guiding the actor toward logical actions within the given circumstances: the greater the actor's observation, the greater the incorporation and communication of neural maps relevant to the current situation.

Observation assists the imagination and memory in constructing the diegetic world. In this regard, the challenge the actor may face relates to turning the green screen environment into the diegetic world. Accordingly, focusing his imagination on the present environment will assist in morphing the two separate spaces into one. A theory that could be of value in this regard is Fauconnier and Turner's conceptual blending. Kemp (2010:103; 2012:119) describes this theory as a linguistic or imagistic mental creation where two different perceptions are compared, the similarities discovered from memory and then blended into a new perception. "Information from one mental space … is combined with information from another … Together they are projected into yet another mental space, that of the conceptual blend, where the information is combined" (Lutterbie 2011:174). Kemp (2010:104–105) avers that Fauconnier and Turner applied this theory to the audience's view of

the actor/character–reality/fiction relationship. Furthermore, Kemp (2010:105) posits that this theory can be applied to the actor when portraying the actor/character in a production. Conceptual blending could be taken further into the green screen/fantasy relationship. Although the similarities between a green screen environment and the diegetic world are minimal, the actor could make use of conceptual blending, especially when the green screen is part of wardrobe. When the green screen becomes part of the actor, the similarities are easier to process and this will help to create an imagistic conceptual blend. Conceptual blending can assist as a tool for allowing fantasy and reality to occupy the same space.

In addition, conceptual blending not only incorporates mechanisms of the mind but also information about the body and its experience; attentiveness where the body is in the room, the layout and configuration of the space and so forth (Lutterbie 2011:174). When the diegetic world and green screen need to coexist, this attention is invaluable. Attention will assist the actor in knowing the layout of the diegetic world, which will guide his actions.

vi. Actions

According to Stanislavsky (2010:40), action can be "*mental and physical*" [emphasis in original]. Mental action within the green screen setup incorporates the components discussed above: imagination, sense memory, attention and communion. However, physical action also plays a vital role for the actor within this setup. As discussed in chapter 3, action is an integral part of the actor's logic, especially if that physical action has to coincide with and take place in the imaginary diegetic world of the green screen. For a physical action to commence there has to be a signal which instigates the travelling of information, by way of motor neurons, from the primary motor region of the brain through the spinal cord to the necessary limbs that need to move (Spence 2009:61–62). Although this is a very elementary view of the process needed for action to take place, it is sufficient because it is not necessary for the actor to know how mental processes work in relation to the execution of action or movement, but rather how the actor relates to the space in which he has to move. Ward (2006:167) states that with action it is crucial to incorporate both visual and proprioceptive information. Therefore space and the associated findings in cognitive

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neuroscience will be considered. When cogitating on space, it is necessary to include the human's relation to space, as this will incorporate both perceptual brain systems and action brain systems (Ward 2006:129). Cognitive neuroscience defines a human's relation to space as follows:

- egocentric space – sensory maps of space in relation to body (Ward 2006:129)

- retinocentric space – sensory maps of space in relation to where the eye looks (Ward 2006:129)

- allocentric space – one item relative to another item (Ward 2006:129)

- peripersonal space – the space surrounding the physical body which the brain allocates as part of the body in the brain maps (Blakeslee & Blakeslee 2008:214).

As the actor is working in a green screen environment or physical green screen space, it is important to understand how the brain functions in relation to physical space. Blakeslee and Blakeslee (2008:32) posit that the body schema is a continually updated system that is responsible for assisting the body to know where it is and to discover objects on the body or in the environment. The effect the environment has on the body schema and its ability to incorporate objects into it (Lutterbie 2011:140–141) makes this system crucial to the actor in the green screen environment. Whether the green screen is set apart from the actor (virtual set), or forms part of the actor (wardrobe etc.), the body schema is created from sensory input, proprioception and the neural networks of the physical body (Blakeslee & Blakeslee 2008:32; Kemp 2010:122). This body schema creates a mental image of the body and therefore movements can be executed without vision or in the mind's eye (Blakeslee & Blakeslee 2008:32).

In the green screen environment the actor operates with physical space and imagined space. Although the body schema is crucial for establishing where the body is located within the physical space, the mental image of the actor can assist in establishing where his body is within the imagined space. According to Ward (2006:143) the brain uses different spatial information for images that are perceived to those used for images that are imagined. Within the hippocampus, which is used for memory, there may be a "spatial map" (Ward 2006:146). This indicates that the

mind "remembers" the space and, therefore, the hippocampus is involved with "spatial learning" (Simpkins & Simpkins 2010:66).

According to Ward (2006:147) and Blakeslee and Blakeslee (2008:130–131), in describing an experiment; when a subject (a rat) was placed in certain locations certain neurons fire, which could mean that when a collection of these neurons is considered together they could function as a map of the external world. These neurons are called "place cells" and they map the environment in order to navigate through that environment (Blakeslee & Blakeslee 2008:130). Ward (2006:147), Blakeslee and Blakeslee (2008:130) and Simpkins and Simpkins (2010:146) write about these neurons as being place cells which are located in the hippocampus. The question is whether the actor can use this spatial map and these place cells within the imagined space in the confines of the green screen. What is important for the actor is not how the biology behind these place cells works, but rather that he has a spatial map, which is part of the hippocampus, an area responsible for memory. This indicates the human organism's ability to 'memorise space'. Ward (2006:148) states that these cells are activated during mental imagining of a certain location. Ward (2006:149) provides an example of the London taxi drivers whose right hippocampuses are larger because of their mental maps which are needed to perform their duties. It therefore seems possible to memorise an "imagined spatial map" within the actual green screen spatial map.

The impact that action has on the mind and vice versa gives credence to the postulation that the actor has to incorporate both mind and body in unison.

4.3.2 Mind-body connection

Available scholarship on the complex relationship between body and mind suggests that mind and body cannot be parted. Damasio (2003:194–195) states that since the mind occurs within the brain, which is connected to the physical body by neural and chemical pathways, these all form one integrated organism. As indicated above, the brainstem connects and facilitates communication between the cortex, the cerebellum (movement) and the spinal cord (body), which indicates the holistic nature of the mind and body. Increasing evidence supports the notion that the mind

and body influence each other (Nataraja 2008:31).

The knowledge to consider and comprehend the body and mind as an all-inclusive entity has been provided by research within the field of cognitive science (Kemp 2010:8). Damasio (2010:39) posits that "neurons are *about* the body" [emphasis in original]. He maintains that the external world is mapped in the brain through the interaction of the body with the environment (Damasio 2010:91). These statements give credence to the idea that the mind and body influence each other. Therefore Stanislavsky's hypotheses of psychotechnique and its "inner psychological drives" of mind, feeling and will are substantiated and crucial in achieving *scenic faith*. Lutterbie (2011:22) concurs that "mind, body, and emotion" form a holistic structure. Kemp (2012:xvi) posits that acting is not just physical or psychological, but holistic and "embodied". The engagement or concentration of one of these holistic features will influence and therefore engage the other features.

Stanislavsky was the first to use the term 'psychophysical' in the field of acting and to focus on both the psychology and the physicality of the actor when working on a character (Zarrilli 2009:13). This mind–body connection or psychophysicality forms the foundation of most acting techniques. Psychophysical techniques such as relaxation and concentration give rise to the imagination which includes the *magic if* (Carnicke 1998:127). Carnicke (2010:7) maintains that Stanislavsky continually believed in one indivisible being, in which the spirit, body and mind had to function together. These statements provide impetus for comprehending the bodymind connection and its use in improving the activation of the *magic if*. The body is in a mutual liaison with emotions (Lutterbie 2011:33) and is, furthermore, required to navigate this world. Maurice Merleau-Ponty (in Zarrilli 2009:45) discusses how one can enter "into intersensory relationships with object, or the world" (which is called the "I can" of the body) by using the components of the body. Zarilli (2009:47), drawing on Ingold, argues for the location of perceptual skills in the bodymind continuum (or "the organic being") and that this being (and therefore these skills) is embedded in a "richly structured environment".

The actor working with green screen needs to be able to manipulate his perceptual skills; therefore, he needs control of both body and mind. Zarrilli (2009:47) states that

according to several experts it is not possible to separate perception, thought and action. This interrelatedness makes the presence of sensorimotor knowledge important, for it is through this type of knowledge that informational input by the senses is converted into "perceptual experience" and allows humans to understand and come to terms with their "spatial relationship to things" (Zarrilli 2009:48). Ward (2006:155) speaks of sensorimotor transformation, which entails connecting where the person is in space with where the objects are perceived in space in order to be able to take action. Sensorimotor skills are also linked with affordances, which gives the actor more choices and numerous possibilities of action within the surroundings (Zarrilli 2009:49). These possibilities need to be understood and incorporated, especially for the actor working in the imaginary green screen environment.

The integration of the body, mind and intention is the goal of disciplines like tai chi and yoga (Blakeslee & Blakeslee 2008:133); this includes the "unitary" effect of meditation (Blakeslee & Blakeslee 2008:122). These disciplines or explorations start with the body "and move both inward toward subtle realms of experience and feeling, and outward to meet the environment" (Zarrilli 2009:63). Meditation, martial arts and yoga are disciplines that activate this bodymind goal of the actor. Nataraja (2008:18) describes meditation as a process that makes use of concentration and attention to still consciousness. Accordingly, meditation is a way to exercise attention (Nataraja 2008:177). There are two methods of meditation – top-down which incorporates relaxation and bottom-up which incorporates prolonged activity (Nataraja 2008:19). Meditation, as has been shown by neuroscience, can alter the brain physically (Blakeslee & Blakeslee 2008:202; Simpkins & Simpkins 2010:107), and it activates both the prefrontal cortex and the cingulated gyrus (Simpkins & Simpkins 2010:109). This activation also involves the hippocampus which facilitates memory and attention (Simpkins & Simpkins 2010:110). Nataraja (2008:84) distinguishes between passive meditation (wide inclusive focus) and active meditation (narrow exclusive focus).

Yoga is an excellent vehicle for achieving the unifying effect of the bodymind for it "encompasses any ascetic, meditational, or psycho physiological technique" (Zarrilli 2009:65). Nataraja (2008:21) states that yoga means "union" and is used to reunite the body and mind. Stanislavsky used yoga exercises to assist sensory awareness in performance and one of the most important components was breath (Zarrilli

2009:14). According to Zarrilli (2009:19), prana and qi/ki can be seen as both "breath-as-breath" and "breath-in-action". The energy created by the breath activates the human being holistically by stimulating consciousness and intensifying sensory awareness (Zarrilli 2009:19).

Meyer-Dinkgräfe (2005:105) posits that prana deals with consciousness and its materialisation in the body. The components supported by breath described in the quote above are some of the same components used in the *magic if*, which means it assists directly in accessing the *magic if*. This breath or life-force is spread throughout the body and it is crucial to be in command of one's breath. This can be accomplished through daily exercises (Zarrilli 2009:37). LeDoux (2002:322) maintains that the use of several brain systems, while in a heightened emotional state or state of mind, will drastically improve learning in those systems. Therefore, the activation of the imagination in conjunction with sense memory, while controlling the breath, will improve the neural plasticity of those networks. By controlling the breath the body can gain balance (Blakeslee & Blakeslee 2008:201). Therefore the actor has to achieve breath control in order to influence his body positively and thereby his actions.

David Zinder (in Zarrilli 2009:20) avers that physical action stimulates and activates the imagination. Kemp (2012:99, 110–111) posits that there are shared brain maps between bodily movement and abstract thought or imagery; these shared and connected brain maps allow bodily movement to kindle and influence the imagination (Kemp 2010:109; 2012:111). When the actor trains his whole body he should attain the skill to be able to connect his whole body to the desired image (Zarrilli 2009:39). A connection with this image could assist not only in accessing the *magic if*, but also in sustaining it.

A discipline or technique that incorporates all of the mind/body components listed above, including imagination, sense memory, communion, concentration, action and relaxation, is guided imagery. Therefore, the incorporation of guided imagery can assist the actor when accessing the *magic if*.

4.3.3 Guided imagery

A technique that draws on the imagination and that could have a positive influence on the use of the *magic if* and, as such, on the development of a technique for green screen acting, is guided imagery. Guided imagery includes imagination, sense memory, communion, concentration and relaxation and has the added effect that physiological changes can occur. Hart (2008:295) defines guided imagery as the creation of images in the mind which positively affect the body physically and emotionally. Naparstek (2000:[sp]) maintains that this technique involves all the senses and emotions.

Guided imagery can be seen as the control or guidance of mental imagery/imagination for specific purposes. Epstein (1989:3) posits that mental imagery is "the mind thinking in pictures". Damasio (2010:149) argues that it is the estimated reformation of previously perceived images.

According to Naparstek (2000:[sp]), guided imagery is a method by which the imagination is engaged. It works on three principles which include the mind–body connection, the altered state and the locus of control.[35] When all of these components work in conjunction a state is created in which the mind is directed toward multisensory images that the body interprets as real. Carson (2010:108) argues mental imagery makes use of all the senses and can assist in the person seeing, hearing, tasting, feeling and smelling that which is not in the physical environment. The technique of guided imagery is credited with unleashing or stimulating creativity (Schwartz 1995:10) and even increasing skills in acting (Naparstek 2000:[sp]). The statement that mental imagery incorporates all the senses in establishing an imaginative world and that it is so real to the brain that it can affect the actor's actions is crucial when the actor has little to no "outside environment". Consequently, this may have a direct impact on accessing the *magic if*.

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[35] "*When we have a sense of being in control, that, in and of itself, can help us to feel better and do better"* (Naparstek 2000:[sp]) [emphasis in original].

Imagery can also have an impact on the physiological, since the body can affect the mind and, in turn, the mind can affect the body (Epstein 1989:4). The body and mind have a give-and-take relationship (Blakeslee & Blakeslee 2008:12) and this interrelationship can be used by the actor to activate the *magic if*. Hart (2008:295) argues that emotional and physical responses occur according to the guided imagery that is being created. Naparstek (Hart 2008:295) confirms the ability of the imagery created to imitate the reactions within the body as if the imagery were an actual physical event taking place. Relaxation is an important part of guided imagery and starts with the liberation of tension and a focus on breathing (Hart 2008:295).

According to Epstein (1989:6), imagery has been used by different cultures over the centuries under different names, mostly for curing emotional illnesses. Examples of the various usages can be found in the writings and practices of Desoille (1961), Jung (1997), Leuner (1984) and Assagioli (2000). Smith (1991:216) states that imagery has been used by "physicians, psychotherapists, artists, business people, teachers, and athletes" including Freud. Epstein (1989:7) states that the use of imagery can create experiences that are new; not just a response to experiences but a creation. This statement concurs with the statements above that every memory, which could also be visual, is actually a new experience. This phenomenon of perpetual new experience gives credence to the view that the actor can develop the ability to 'experience' within the acting moment on stage.

A way to activate the necessary neural patterns when working with imagery has been studied by Shelley Carson. She offers seven brainsets which she calls the "CREATES brainsets". These are "hypothetical constructs based on our current knowledge of human psychology and how the brain works" (Carson 2010:15). One of these brainsets is the "*envision brainset*".[36]

• *Envision brainset*. This refers to thinking visually, manipulating objects in your mind's eye, the brainset of the imagination, mental imagery and visualisation (Carson 2010:16–17).

This brainset is crucial to the survival of the human race, as it "provides the neural

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[36] As this is a concept of Carson, *envision brainset* will be italicised throughout this study.

basis" of how humans see, in pictures, themselves and the world (Carson 2010:106). This picture of the world and of the self can be of much help to the actor in placing himself as a character in the imaginary environment of the green screen. The incorporation of mental imagery and the ability to think hypothetically are the most important factors in this brainset (Carson 2010:107). Hypothetical events are retrieved and programmed by most of the same brain processes that are involved with retrieving and programming real events (Carson 2010:104). Hypothetical thinking can also be linked to Stanislavsky's *magic if,* as Carson (2010:110) states that with this type of thinking a person thinks 'what if?' when considering situations and events that might be probable or not in the real world. The following is what happens in the brain when using 'what ifs':

> The main pattern of activation, then, for the *envision* brainset is a network connecting the executive centers (particularly in the right hemisphere) to left association centers and to areas in the parietal, temporal, and occipital lobes that are dedicated to processing information from your senses [emphasis in original] (Carson 2010:114).

An effort can be made to intentionally and spontaneously control mental images by "regulating the activation of the executive center" (Carson 2010:113). Carson (2010:113) states that there are explorations that assist in achieving this regulation by neutralising the prefrontal areas; this can be achieved through physical relaxation and meditation.

Epstein (1989:14) talks about four aspects when preparing the mind for imagery work;[37] the first two aspects are applied to normal imagery work:

• *Intention* – this must be defined at the beginning and is the goal of the imagery work (Epstein 1989:14).

• *Quieting* – this includes external for concentration (Epstein 1989:15) and internal for relaxation (Epstein 1989:16).

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[37] Epstein (1989:14) uses this in the field of "imaginal healing".

In this type of work it is important to work with the images and to connect the images to sensations and emotions (Epstein 1989:23). The connections and amount of experiencing of the image depend on the information, awareness and attention given to it (Lusebrink 1991:37). If these aspects are used it could assist the actor in accessing the *magic if*.

4.4 CONCLUSION

The purpose of this chapter was to trace relevant influences that can have a bearing on the *magic if* specifically as applied to green screen acting. This was achieved by means of a literature review of cognitive neuroscience, guided imagery and the notion of psychophysicallity. The reason for conducting this review was to achieve a better understanding of how the mind and body work in accessing the *magic if* effectively and, through this understanding, create training explorations and a strategy to help the actor circumvent the possible pitfalls of working with green screen. On the basis of all this research it will be possible to construct the proposed explorations and strategy

In the next chapter training explorations and a strategy will be constructed in an effort to assist the actor in circumventing the possible challenges that can arise when working with green screen. These explorations and strategy will incorporate the knowledge gained from the work conducted in the previous chapters, including the challenges the actor experiences when dealing with green screen technology, the *magic if* and all its components, and neuroscientific discoveries relating to mental imagery and psychophysicality.

CHAPTER 5
STRATEGIES AND EXPLORATIONS FOR THE CIRCUMVENTION OF CHALLENGES THE ACTOR FACES WITHIN THE GREEN SCREEN ENVIRONMENT

5.1 INTRODUCTION

The purpose of this chapter is to develop systematic explorations and a training strategy using the *magic if*. The aim of the devised programme will be to assist the actor in circumventing possible challenges that may arise when working with green screen technology. It will incorporate the knowledge gained from the literature reviews conducted in the previous chapters, the challenges and uses of green screen, the *magic if* and all its components, as well as the neuroscientific discoveries regarding mental imagery and psychophysicality.

This chapter is divided into two sections. The first section focuses on the development of the actor's bodymind in order to help strengthen the actor's psychophysical responses in accordance with the requirements and components of the *magic if*. This will assist the actor to develop and strengthen the strategies required when working within a green screen environment. This section consists of explorations that have to be turned into a training programme. The actor can be requested to step into a green screen environment and delve into an imaginary diegetic world at short notice, he therefore needs to optimise his ability to create the diegetic world for himself and, using the techniques that will be discussed, produce *scenic faith* in a limited period of time. The first section will thus provide training explorations that will potentially prepare the actor's body and mind longitudinally.

The second section will concentrate on the execution of these explorations. This is formulated as an immediate strategy for the actor who has secured a role working in a green screen environment. This technique can be used for preparation in the period leading up to filming, as well as during the actual filming process itself. It is an on-set technique that can assist in navigating the challenges of green screen successfully and promoting *scenic faith*.

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It is crucial for the actor to not only attempt the on-set technique, but also to prepare himself psychophysically with the ongoing development of his body and mind. The more disciplined the actor is in developing the components needed to access the *magic if*, the easier and quicker it will be to incorporate the *magic if* into the green screen environment and, thus, the on-set technique will be more successful.

5.2 SECTION ONE: STRATEGY DEVELOPMENT

This section consists of daily explorations which will strengthen the use of the *magic if* and its components. These explorations are geared to the building of a technique that, through daily practice, will become a habit. This notion is based on the conscious competency model[38] as described by Kemp (2010:34–35; 2012:32):

- Stage 1 – "unconscious incompetence"
- Stage 2 – "conscious incompetence"
- Stage 3 – "conscious competence"
- Stage 4 – "unconscious competence"

This correlates directly with Stanislavsky's notion of accessing the unconscious by conscious means, as discussed in chapter 3. By becoming aware of the unconscious processes, then exercising and strengthening them, the processes will unconsciously work more effectively. This is substantiated by neural plasticity. It is through repetition that a technique develops into a habit and, subsequently, moulds an expert (one who does not require a conscious systematic process) (Lutterbie 2011:12–13). Consolidation of the neuron maps involved in a certain technique, while recognising the successful patterns of the past in conjunction with the restrictions of behaviour, leads to the mastering of the technique (Lutterbie 2011:156). The restrictions of behaviour involve the physical limits imposed on the actor by his body and those imposed on him by the director. The actor needs to strengthen the neural networks connected to the components of the *magic if* as this will allow him to create and achieve *scenic faith* in working conditions where time is

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[38] The origin of this model is difficult to ascertain. It has been ascribed to various sources, most notably Gordon Training International, W Lewis Robinson, as well as to Abraham Maslow (Miller, Vandome & McBrewster 2011).

limited and, consequently, propel him into action in the proposed environment.

5.2.1 Strategic explorations

At first the explorations are geared to specific components in order to strengthen the neural maps and encourage their activation. This is made possible by the plasticity of neurons. These explorations then build up to the incorporation of all the components of imagery and the implementation of the *magic if*. It must be acknowledged that although these explorations emphasise a single component crucial to accessing the *magic if* and creating *scenic faith*, they regularly incorporate other components which allow the components to work in unison in order to create synergy. This is crucial as activating one component is necessary to activate the other components. The explorations then incorporate more and more of the components in order to create and achieve a single strategy for circumventing the challenges of green screen acting.

After each exploration has been introduced, it will be unpacked according to its relation to the *magic if*, its neuroscientific basis and its applicability to green screen acting.

As has been discussed, relaxation is paramount in allowing the other components associated with the *magic if* to be engaged effectively and most acting training starts with this component.

i.   Relaxation

The following exploration incorporates the importance of breath, the release of tension in the muscles and a "tension observer". The exploration is provided by O'Brien (2011:76–77) in *Stanislavski in practice: exercises for students*.

Meditation exploration:
- Sit upright in a chair, keeping the back and neck elongated.
- Keeping your palms facing upwards, rest your hands on your legs and touch

your index and middle fingers with your thumb.

- Concentrate on your breathing for a while – in and out, in and out.
- Now, starting with your toes, explore your body and look for tension. Take your time. When tension is found, focus on releasing the tension by first contracting and then letting go. Work your way up to the top of your head.
- When you are in a relaxed state focus on the breathing again.
- Now turn your focus onto your eyelids and start repeating the sound "hOMe", sounding only the "om". This must be done in time with your breathing. The sound must be sent into the mind.
- After a while the "om" will become silent and exist only in the mind.
- Do this for roughly ten minutes.
- Bring your attention back to your eyelids and breathing.
- Finish the exploration.

In relation to the *magic if*: The exploration creates a state of relaxation in the actor. As discussed in chapter 3 (section 3.2.4 no. vii), relaxation releases the actor from tension which can inhibit the creative process (Carnicke 2009:223; Stanislavski 2010:120; Krasner 2012:24), the actor's mental processes and imagination (McGaw et al 2011:22). This will help the actor to communicate effectively with the environment. Thus, relaxation will allow the actor to use the *magic if* and its components more efficiently.

Neuroscientific basis: As discussed in chapter 4 (section 4.3.2), a relaxation state in meditation facilitates the implementation of the *magic if* by activating the following regions of the brain: the prefrontal cortex (images, attention and executive function), the cingulated gyrus (creativity, spontaneity and attention) and the hippocampus (memory and spatial awareness). Neuroscience has indicated that meditation physically changes the brain and its neural patterns (Blakeslee & Blakeslee 2008:202; Simpkins & Simpkins 2010:107), while breath invigorates consciousness and the senses and stimulates the bodymind (Zarrilli 2009:19). Breath is thus crucial to relaxation and the *magic if* as it facilitates the holistic nature of the actor (ch 4 section 4.3.2).

Applicability to green screen acting: As discussed in chapter 2, the green screen environment offers few of the environmental stimuli the actor needs to create *scenic faith* and be congruent with the diegetic world. It is important that the actor activate the brain areas discussed in this exploration, in order to, create and remain within the imaginative diegetic world that is needed in green screen acting.

The following yoga exercises are intended to produce a calm relaxed state in the bodymind in order to facilitate the actor's work on a character (O'Brien 2011:72–73):

Yoga exploration: Downward Dog

- Find an open space and lower yourself onto your hands and knees in a crawling position.
- Now straighten your arms and legs and lift your hips to form the shape of a triangle.
- Relax your neck and slowly lower your ankles to the ground.
- Concentrate on your breathing.
- Transfer the weight by pushing up with your legs.
- Keep breathing and focus on releasing the tension.

Yoga exploration: Warrior 1

- From the downward dog position, bring the right foot next to the right hand.
- On the ball of the left foot, rotate the foot 45° with the heel turned towards the body.
- Bend the right knee to 45°.
- Turn your hips so that they form a straight line keeping the upper body facing the direction in which the right knee is pointing.
- Straighten the back, place your palms together and straighten the arms so that they are extended above the head.
- Look up towards the hands, breathe and relax into the position.
- From here return to downward dog and then repeat the pose on the left side.

In relation to the *magic if*: The exploration includes meditation which, as discussed, creates a relaxed state in the actor in order to access the *magic if* and its

components. These yogic explorations are built on the notion that yoga integrates the body and mind (Zarrilli 2009:65). The *magic if* is implemented to achieve a psychophysical response within the proposed environment and, therefore, the integration of the body and mind is essential, as it will assist in activating the inner psychological drives.

Neuroscientific basis: This exploration activates the same regions as the meditation exploration, as discussed above, while incorporating motor neurons to facilitate the psychophysical nature of the exploration. Physical action engages the imagination (Zarrilli 2009:20; Kemp 2010:109).

Applicability to green screen acting: The actor has to physically operate within the green screen space, which indicates the necessity to incorporate the body in the relaxation explorations. For the actor to achieve *scenic faith* he needs to incorporate his body and mind and not just live the circumstances conceptually in the mind (ch 2 section 2.4).

ii.   Concentration and observation

The previous chapters indicated that concentration is needed when implementing the *magic if*. The explorations discussed here combine attention and observation, because paying attention to an entity (whether real or imagined) calls for observation (Bennett & Hacker 2013:44). The following exploration is based on some of Stanislavsky's concentration exercises:

Concentration and observation exploration
- Find a comfortable space and sit down.
- Close your eyes and focus on your breathing.
- Concentrate on the sounds directly around you. What do you hear? Focus on one sound. Once you have decided on a sound, concentrate on that sound only and drown out the others. What is this sound? Consider all the detail. Where does it come from? What are the nuances? Do you like the sound? Why? What does it make you think of?

- Once you are satisfied with all the answers, return your focus to your breathing.

- Open your eyes and look around you. Decide on an object and make this your focal point. Again, drown out all other visual stimuli. What is it you see? Consider all the detail. How does it work? What is it for? What would it feel like? How would you interact with it? How does the object and interaction make you feel?

- Once you are satisfied with the answers, return your focus to your breathing.

- Again, close your eyes. Now recall what you saw in close detail. Describe it to yourself.

- Bring the focus back to your breathing and open your eyes.

- Observe the object again and see how well you recalled the object.

In relation to the *magic if*: As discussed in chapter 3 (section 3.2.4 no. vi), concentration and attention are needed to remain within the diegetic world (Barr 1997:34–35; Gordon 2006:46) which facilitates the implementation of the *magic if*. Concentration and attention also assist the imagination (Stanislavsky 1967:429; Bowskill 1977:36). This necessitates the training of these components.

Neuroscientific basis: This exploration is based on behavioural goals (top-down source) (see ch 4 section 4.3.1 no. iv). As with the meditation exploration, it is crucial to first relax and breathe as this will activate the prefrontal cortex (Simpkins & Simpkins 2010:109) that is responsible for behavioural control (Lutterbie 2011:109) and attention (Nataraja 2008:56). As the actor focuses his attention the neurons responsible for behavioural control strengthen. Consequently, attention activates neurons within the visual cortex (Deyoe 2002:712), as do imagination and mental imagery (Ward 2006:125; Damasio 2010:149–150). Therefore a combination of these components will engage and strengthen the neural pathways.

Applicability to green screen acting: The actor needs control of his attention as he will be required to remain in the diegetic world and will be asked to be physically involved in it, although there will only be a green screen. As discussed in chapter 2 sections 2.3.3 and 2.4, green screen can be used in various ways (backdrop,

wardrobe, virtual set) and can impede the actor's actions depending on the director's directions; therefore, the actor needs to be able to focus his attention on the relevant imagery and actions.

The following exploration is adapted from Stanislavsky's circles of attention:

<u>Concentration exploration: circles of attention</u>
- Find a space.
- Close your eyes and breathe.
- Open your eyes and find a focal point (object) close to you. Answer the same questions as in the previous exercise.
- Now expand your awareness and attention to a small circle that incorporates just you and the object. Keep your attention within the circle. What do you see, hear and feel?
- Now expand the circle to incorporate a little more. Once you have established the circle ask the same questions.
- Now expand the circle even more and do the same.
- Repeat this procedure until the whole environment around you has been included in the circle.
- Once the whole environment is within the confines of the circle, repeat the steps in reverse until you are once more focused on the focal point.
- The focal point is like the life line of the attention.
- It is important to reduce the circle the moment the attention wavers beyond the confines of the established circle. When this happens reduce the circle until the attention is locked within the borders. If necessary bring the attention all the way back to the focal point.

<u>In relation to the *magic if*</u>: As discussed in chapter 3 section 3.2.4 number vi, control of concentration and attention is needed to remain within the diegetic world of the play; this facilitates the implementation of the *magic if* and promotes "public solitude" (Carnicke 2009:215). Public solitude is the state that sustains the actor within the diegetic world and excludes that which falls outside the diegetic world (McGaw et al 2012:122). This includes the crew and equipment. The *magic if* asks the actor to

accept the possibilities of the proposed surroundings, which do not include the crew and equipment, therefore public solitude is crucial to the *magic if*. The exploration builds on the control the actor has over his attention.

Neuroscientific basis: This exploration is also based on behavioural goals (top-down source) as discussed in chapter 4 section 4.3.1 number iv. It is crucial to first relax and breathe as this will activate the prefrontal area that is responsible for behavioural control and attention. This exploration is based on the notion that attention (Ward (2006:130; McConachie 2008:24), as well as certain neurons in the thalamus that are responsible for attention, (Nataraja (2008:95) have been described as working like a spotlight (ch 4 section 4.3.1 no. iv). As such, the actor can guide his attention so as not to incorporate that which falls outside of the diegetic world. This control of attention also steadies the spatial map (Kandel 2006:312).

Applicability to green screen acting: With this level of control the actor can incorporate only that which is necessary in order for him to maintain the imaginative diegetic world. When working with green screen a spatial map of the environment is crucial. As discussed in chapter 2 section 2.3, the actor's actions need to be congruent with the diegetic world that will be composited in postproduction; thus, concentration to steady the spatial map (real and imagined) and concentration on the actions within the limitations of the director are crucial.

The following exploration is designed to expand the actor's repertoire and is based on Stanislavsky's work:

Observation exploration
- Find a comfortable position in any type of environment, for example a shopping mall, a park or an office building.
- Take a few deep relaxing breaths.
- Concentrate on your surroundings. What do you see, hear and smell?
- What do you feel about the environment? Do you want to interact or just view? When you are compelled to interact, follow this need and observe what you feel with your senses and your emotions.

- What events are taking place around you? How do these events make you feel? According to you, are these events necessary, logical, humorous and so on?

- Add imagination to the observed event.

- Bring your concentration back to you and recall the experience.

- Take a few deep relaxing breaths and end the exploration.

In relation to the *magic if*: As discussed in chapter 3 section 3.2.4 number iii, observation is crucial to the implementation of the *magic if*. This exploration will supplement the imagination and memory, which is crucial when working with the *magic if*. In order to create, the actor uses his own experiences and observations (McGaw et al 2012:98) and the imagination is constructed from these experiences (Chekhov 1983:137). The actor will thus gain experience and understanding which will consequently assist him in with authenticity when creating and reacting to the diegetic world.

Neuroscientific basis: As discussed in chapter 4 section 4.3.1 number v, the concept of neural re-entry dictates that existing neurons of past experiences are activated when relevant to a current situation, simultaneously fostering new connections. Therefore, observation will simultaneously activate old and new brain maps relevant to the present experience. This will assist the actor in reacting congruently with the 'reality' of the diegetic world as he will possess strengthened neural maps which will activate when they are relevant to the diegetic circumstances. By adding imaginational content the actor is activating the *envisioned brainset* and hypothetical thinking, as discussed in chapter 4 section 4.3.3.

Applicability to green screen acting: The greater the actor's observation, the better he will be able to activate neural patterns relevant to the imagined green screen environment. This will accordingly facilitate *scenic faith* and congruence with the special effects added in postproduction.

When the actor is relaxed and concentrated and is equipped with an observational repertoire, he can enter the imaginative realm with confidence.

iii. Imagination

The following explorations are built around guided imagery. According to Naparstek (Hart 2009:295), this multisensory mental imagery elicits responses 'as if' the stimuli were real. These images are flexible and can adapt logically to what is required (Damasio 2010:149). Chapter 4 established that guided mental imagery incorporates relaxation and concentration and increases the ability and activation of the imagination.

While attempting these explorations, the actor has to remember and incorporate the following, as discussed in chapters 3 and 4:

- Be an active participant as this engages more multimodal brain processes.
- Ask questions and imagine in more detail (use all the senses) as this stimulates similar sensory regions and strengthens the neural connections.
- Relax and concentrate.

The first exploration is based on an exercise from *Your creative brain: seven steps to maximise imagination, productivity, and innovation in your life* (Carson 2010:117–118) and incorporates Stanislavsky's ideas on imagination.

Imagination and sense memory exploration: familiar places
- Close your eyes and take a few deep relaxing breaths.
- Decide on a familiar room or place.
- What do you see? Look around and imagine the visual setting as vividly as possible.
- What do you hear? Imagine all the possible different sounds as vividly as possible.
- What do you feel physically? Grass, sand, a breeze? Imagine in as much detail as possible.
- What do you smell? Imagine all the possible smells as vividly as possible.
- As you imagine all the sensory input vividly, take your time and just be in this

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imaginary environment.

- When ready, take a few deep relaxing breaths and open your eyes.

This exploration should be done every day and takes about five minutes. Each time it can be done by imagining a different familiar place, although the same space can be incorporated several times. The environment should remain familiar as this strengthens the sense memory in addition to stimulating mental imagery.

In relation to the *magic if*: The training of imagination is both possible (Stanislavski 2010:63; Gordon 2006:38; Krasner 2012:7) and crucial in creating and establishing the diegetic world in the green screen environment and implementing the *magic if* (ch 3 section 2.3.4 no. i). This exploration facilitates the notion that imagination and sense memory function together (Stanislavsky 1987:20; Merlin 2007:143) and fosters the idea that sense memory can recreate an experience (Lobdell 2000:182) (ch 3 section 2.3.4 no. ii). This recreation of experience will establish belief when asking "What would I do if …?"

Neuroscientific basis: This exploration engages and strengthens neural patterns similar to external stimuli. Chapter 4 section 4.3.1 number i and ii and section 4.3.3 established that the more vivid the imaginary sensory stimuli, the greater the amount of corresponding neural maps that will activate. This facilitates the brain's 'belief' in the event taking place and can affect decisions and reactions (Epstein 1989:13; Carson 2010:108).

Applicability to green screen acting: As discussed in chapter 2 section 2.3, the actor has to be congruent with a diegetic world which is not present when filming takes place. The actor working with green screen needs as much imaginary sensory stimuli within the imaginative diegetic world as possible in order to re-experience and generate appropriate responses to the proposed circumstances when answering the question, "What would I do if …?"

The following exploration has been developed to enhance the imagination while incorporating various proposed circumstances of others.

<u>Imagination and given circumstances exploration: familiar stories</u>

- Close your eyes and take a few deep relaxing breaths.

- Decide on a specific familiar story, for example Romeo and Juliet.

- Decide on a specific scene in the story, for example the balcony scene.

- Place yourself actively (first person point of view) in the proposed environment from the perspective of one of the characters, for example Romeo.

- Vividly imagine all the sensory stimuli: What do you see from your chosen perspective? What do you hear? What do you smell? What do you physically feel in the environment from this perspective?

- As you vividly imagine all the sensory input, take your time and just be in this imaginary environment. The imagined environment must be vibrant and have movement, for example animals running around or Juliet coming out onto the balcony, because static imagery and moving imagery engage different neural maps.

- Now change your perspective to another character, for example Juliet.

- Vividly imagine all the sensory detail from her perspective.

- As you vividly imagine all the sensory input, take your time and just be in this imaginary environment. The imagined environment must be vibrant.

- When ready, take a few deep relaxing breaths and open your eyes.

This exploration must be done every day as it trains the actor to incorporate different given circumstances into his own imagination. This is crucial when the actor has to incorporate the given circumstances described by the director. The actor can take various familiar stories from plays or films and this broadens the variety of environments the actor has to imagine. For example, he can imagine foreign, historical or fantasy environments. The importance of the exploration is the vivid imaginative stimuli which are merged with the given circumstances. The cognitive processes are similar to the previous exploration.

<u>In relation to the *magic if*</u>: As discussed in chapter 3 section 3.2.3, the *magic if* cannot be implemented without the given circumstances (Stanislavski 2010:52). The given circumstances are supplied by outside sources, namely, the script, the director or the special effects supervisor. Out of these circumstances or environmental

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details the imaginary world is built and the actor can ask: "What would I do if …?" Therefore the actor has to create while incorporating other visions into his own creation.

<u>Neuroscientific basis:</u> Through the quality of neural plasticity, as discussed in chapter 4 section 4.2.4 number i, the imagination can be strengthened by repetition. The actor has to be able to imagine various worlds and fantasy on demand. Accordingly, this exploration allows him to strengthen and engage the neural patterns involved in imagination, as well as their manipulation. This is a necessity because, when the imaginary image is manipulated, different brain patterns are activated (Carson 2010:109) (ch 4 section 4.3.1 no. i). The more neural patterns that are involved in the imaginary sensory stimuli, the stronger the experience and belief in the environment will be (ch 4 section 4.3.1 no. i and ii and section 4.3.3). As established in chapter 4 section 4.3.1 number i, active imagination is crucial as it will activate more regions of the brain. Therefore, by actively imagining, the actor readies himself to incorporate various given circumstances which the director may introduce. In this way, the actor activates and strengthens the neural maps responsible for creativity.

<u>Applicability to green screen acting:</u> Chapter 2 established that when working in a green screen environment, the actor has to imagine and act within the confines of a diegetic world created by the director and the special effects supervisor. Therefore, the given circumstances of the environment are not seen and the actor needs to be able to incorporate the director's or special effects supervisor's ideas into his own imagination in order to react congruently with the imaginary world added in postproduction. This exploration assists the actor in exercising his imagination, while incorporating different given circumstances.

The following exploration builds on the foundation of the previous exploration, while incorporating the ideas relating to communion as established in chapters 3 and 4:

<u>Imagination and communion exploration: familiar characters</u>
- Close your eyes and take a few deep relaxing breaths.
- Decide on a specific familiar story, for example Romeo and Juliet.

- Decide on a specific scene in the story, for example the balcony scene.

- Place yourself actively (first person view) in the proposed environment from the perspective of one of the characters, for example Romeo.

- Vividly imagine all the sensory stimuli: What do you see from your chosen perspective? What do you hear? What do you smell? What do you physically feel in the environment from this perspective? The imaginative environment must be vibrant.

- What are the other given circumstances of this scene? Of the character? When is it? Why are you there? What is the reason?

- Now incorporate this information into your imagination. How do you feel about your surroundings? When you look at the balcony, has your communion with it changed? Has the wall connected to the balcony adopted a new affordance, maybe something that can be climbed? Do the sounds have new meaning, as you probably try to remain unnoticed?

- Explore your communion toward all the imagined sensory stimuli.

- When ready, take a few deep relaxing breaths and open your eyes.

This exploration must be done every day because it trains the actor to have communion or communication with the imagined environment.

In relation to the *magic if*: Chapter 3 section 3.2.4 number iv established that the *magic if* and *scenic faith* can only be achieved when there is communion with the environment, objects or wardrobe. The actor has to be in continual relation to the proposed surroundings (McGaw et al 2012:125–128) and the external stimuli can be real or imaginary (Stanislavsky 1973:202). As discussed in chapter 3, communion promotes believability and influences decisions.

Neuroscientific basis: Chapter 4 section 4.2.4 number ii and section 4.3.1 number iii established that humans are in a constant relationship with their environment. This triggers emotional and physical responses, which are part of consciousness (Blair 2008:61; Damasio 2010:188). Reaction to these relationships can be physical or mental, external or from memory and may elicit responses (Damasio 2003:49). These recurrent thoughts, feelings and reactions are built on interaction with the

direct environment and the organism's similar experience of the situation, as based on the concept of neural re-entry. The limbic system is also involved as it is responsible for emotion, memory and behaviour (Rohkamm 2004:144; Nataraja 2008:61; Lutterbie 2011:82) (ch 4 section 4.2.4). By exploring the communication with the imaginative surroundings the actor activates more relevant neural maps which will facilitate the implementation of the *magic if* and create *scenic faith*.

Applicability to green screen acting: For the actor to achieve *scenic faith* within the created imaginary world, he needs to relate to this world (ch 3 section 3.2.4 no. iv and ch 4 section 4.3.1 no. iii). According to Hornby (1992:162) this is crucial when working in film. Relation and communication with an imaginative reality in a green screen environment will facilitate reactions that are congruent with the diegetic world, while the inner psychological drives of will, mind and feeling are steadily being activated.

When the actor operates in a green screen environment, the challenge is to incorporate an imaginary diegetic world in that environment. This is in line with Lobdell's (2000:186) description in chapter 3, where the actor has to open his eyes and allow the visualised floor and studio floor to exist simultaneously. As discussed in chapter 4 section 4.3.1 number v, the theory of conceptual blending permits this to occur. The following exploration builds on the previous explorations and introduces the theory of conceptual blending.

Imagination and conceptual blend exploration:
- Find a quiet open space.
- Close your eyes and take a few deep relaxing breaths.
- Follow the imagination and communion exercise.
- Now open your eyes and overlay the mental image on the space.
- Compare the two spaces and allow the comparisons to create the blend.
- Do the same with the wardrobe.
- Stand up and investigate your new surroundings, incorporating all the senses and communion.
- Every time the conceptual blend is lost, close your eyes and regain the mental

image before re-opening your eyes.

- When satisfied, close your eyes and take a few deep relaxing breaths, then open your eyes.

This exploration has to be done every day and is crucial in order for the actor to gain the ability to visualise and act in a green screen environment, which is a necessity for implementing the *magic if*.

<u>In relation to the *magic if*</u>: The *magic if* (action) can only be implemented when the created imaginary world coexists with the green screen environment. As discussed in chapter 3, the *magic if* is a psychophysical response to the diegetic world (Merlin 2007:127; Stanislavski 2010:67, 84) and therefore needs to exist outside the actor and not merely in the mind. Thus, the actor needs to be able to move within the created space.

<u>Neuroscientific basis:</u> As discussed in chapter 4 section 4.3.1 number v, the theory of conceptual blending incorporates the following: 1) Two different mental spaces are compared and information gathered and blended to form new mental space. 2) Information on the body – experience and position. This concept therefore allows for the imaginary and the real world to form a new environment while establishing the body schema within the physical environment. This is due to the body schema being generated from sensory input, proprioception and the neural networks of the physical body (Blakeslee & Blakeslee 2008:32; Kemp 2010:122). The physical space and the actor's spatial map are thus crucial for navigating in line with the director's stipulations. As discussed in chapter 4 section 4.3.1 number vi, the body schema's mental image (Blakeslee & Blakeslee 2008:32) can assist in establishing where the body is in the mental space. The body movements in the mental space assist the imagination (Kemp 2012:xviii) and, in conjunction with the imaginary sensory input and the theory of conceptual blending, give credence to this exploration in constructing an environment where the actor can implement the *magic if*.

<u>Applicability to green screen acting:</u> This exploration strengthens the actor's ability to conceive and sustain the imaginative diegetic environment in a green screen environment. For the actor to remain congruent within the diegetic world, while

retaining the physical limits set for him by the director and the green screen, the simultaneous existence of both environments is crucial.

iv. *Magic If*

The *magic if* is a catalyst for bringing the actor into the imagined world and for initiating action and *scenic faith*. This, in conjunction with the created environment of the imagination, leads the actor to activate the mind and body. This is based on Stanislavsky's theory of the inner psychological drives and on the holistic nature of humans as discovered by cognitive neuroscience. Therefore, when the actor builds a logical imagined environment around sense memory detail, given circumstances and communion (mind) which can exist simultaneously with the green screen environment, and engages the proposed circumstances physically with the assistance of the *magic if* (will), then the actor will experience the scene and its affects (feelings). This leads to *scenic faith* and experiencing. Thus, the *magic if* is the final trigger for launching the actor physically into the realms of the diegetic world and is only implemented in the final exploration. It is thus crucial to build on the other explorations first in order to develop vivid multisensory imaginary abilities capable of relating to the imaginary situation, as well as the skill to blend them with an external environment.

The following exploration is built on the previous explorations and incorporates all the components discussed in this study. It is based on Stanislavsky's teachings and use of the *magic if* as discussed in chapter 3, on the "as-if" body states as discussed in chapter 4 section 4.3.1 and on Carson's hypothetical thinking *envision brainset* as discussed in chapter 4 section 4.3.3. It trains the actor to implement the *magic if* in an attempt to circumvent the challenges posed by green screen acting.

Magic if exploration:
- Find a quiet space.
- Close your eyes and take a few deep relaxing breaths.
- Follow the imagination and conceptual blend exploration.
- Once you have achieved the conceptual blend ask yourself: What would I DO

if I were the character and the proposed circumstances were real?

- Propel yourself into action within the circumstances, improvise and play out the scene. Insure all your actions are logical and congruent with the proposed surroundings.

- Once the scene has taken its course, introduce a new 'what if' (for example, "What would I do if guards arrived?") and improvise the way this would influence the environment and your actions. This will strengthen your use of the *magic if*, and your ability to adapt and to maintain *scenic faith*. Keep the answers logical.

- You can introduce as many new 'what ifs' as you want, as long as they remain logical and congruent with the established diegetic world.

- When ready, end the scene and take a few deep relaxing breaths.

In relation to the *magic if*: As discussed in chapter 3 section 3.2.3, the *magic if* is implemented in association with the given circumstances when the question is asked: What would I do if I were the character and the current circumstances were real? The *magic if* therefore facilitates action and belief in the supposition of circumstances. This exploration brings all the other explorations together (creation of the diegetic world) and then implements the *magic if* to urge the actor into action within the created circumstances. It therefore incorporates both single-storey and multi-storey *ifs* as defined by Stanislavsky[39] (Stanislavski 2010:49–50). This exploration also incorporates improvisation which, as discussed in chapter 3 section 3.2.1 number i and section 3.2.4 number i, facilitates experiencing and allows the actor to adapt to any new hypothesis that might be introduced by the director while working with green screen. This improvisation can be correlated with active analysis, although the improvisation here is not conducted in an ensemble (ch 3 section 3.2.5).

Neuroscientific basis: As discussed in chapter 4 section 4.3.1, "as-if" body states confirm that false body states are experienced because they involve the activation of body sensing and body moving maps (Damasio (2010:102–103). Thus action in the *magic if* and the scene is crucial. When engaged in vivid sensory imagination, similar

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[39] As previously indicated, I use the Stanislavsky spelling. When citing Benedetti's translation I

brain maps are activated 'as if' the actual experience were perceived and could affect a person's actions (Carson 2010:108) (ch 4 section 4.3.1 no. i and ii).

Furthermore, the "as-if" body state will activate the emotional content involved in the situation and experience, even though the body is not physically in that state (Ward 2006:321). Therefore, when the actor is able to use his imagination with full sensory detail, brain maps of motor activities, sensory activities and emotional activities will be activated 'as if' he were currently experiencing the imagined environment as perceived environment. This activation can assist the actor to 'believe' in the proposed environment, act accordingly within the proposed environment and subsequently achieve *scenic faith*. All the components are now functioning together owing to both the multimodality of the brain systems and parallel processing (ch 4 section 4.2.4). In the exploration the actor introduces different 'what ifs' as this facilitates the *envision brainset* which incorporates mental imagery and hypothetical thinking (Carson 2010:107) (ch 4 section 4.3.3), both crucial to imagination. The hypothetical question of 'what if?' allows the actor to consider situations whether they are real or imagined (Carson 2010:110). As discussed in chapter 4 section 4.3.2, action within the scene develops the imagination further, which allows the actor, in turn, to incorporate more 'what ifs' into the scene.

Applicability to green screen acting: In chapter 2 section 2.3.3 and 2.4, the challenges of green screen were discussed. These included limited external sensory stimuli, incorporation of imaginative given circumstances and the congruency of actions within the green screen and imaginative environments. Thus, when working with green screen it is important to first create the diegetic world imaginatively and to know the limitations of the actions (congruency with visual effects) and then to implement the *magic if* question. Through this final exploration the actor has created a diegetic world that supplants the green screen and has instigated action according to the created circumstances. This facilitates *scenic faith* within the green screen environment.

The explorations in this section were designed to allow the actor to develop a

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incorporate his spelling of Stanislavski.

technique that can be implemented when faced with the challenges of green screen acting. These daily explorations are aimed at gaining control of the *magic if* and all its components as discussed in chapter 3, and strengthening the neural maps associated with these components as discussed in chapter 4.

The next section has been constructed to assist the actor who is about to work in a green screen environment and is in need of a strategy to apply on set.

5.3 SECTION TWO: ON-SET STRATEGY

This section covers the actor's preparation for green screen acting from the point where he has secured the role and needs to prepare for the green screen scenes that lie ahead. It is important for the actor to start preparing even before arriving on set.

5.3.1 Preparation

The actor has to prepare before the day of filming starts. This includes a consideration of character, learning lines and managing time. This study focuses only on the preparation for working with green screen and assumes the actor has the ability to prepare for all other facets of filming.

When working with green screen the actor needs to be fully informed on all the circumstances involving the green screen: How will the green screen be used? Will it be an extension of the set, a virtual set or used as body cover? What will the environment be, the director's vision of the environment and the interaction with the environment? Who are the characters in the scene and their relationship to each other? The actor has to gather as much information as he can to incorporate into the imaginative reality. This will allow the actor to create a more detailed imaginative environment that can be blended with the green screen environment. It must be conceded that the nature of the film industry is unpredictable and the actor will not always have enough time or sufficient information to prepare properly beforehand.

In order to prepare for green screen acting, the imagination explorations should be

attempted, and the information on the given circumstances should be incorporated in building the imaginary environment. This should be done until all the details have been considered and can be easily recalled and, finally, a conceptual blend achieved. Walk through the diegetic world you have created, improvise and introduce new 'what ifs' into the improvisation. This preparation will enable the actor to have an imagined spatial map of the diegetic world ready before filming that is flexible enough to allow for the possible inclusion of new 'what ifs'.

5.3.2 Strategy

The actor's preparation has to be completed by the day of filming. He must learn his text and know his character and the character's circumstances. Only then does he have the capacity to stimulate the three psychological drives which will promote *scenic faith*. Stanislavski (2010:299–300) provides the actor with the following check list which will optimise the actor's preparation on the day of performance:

- Arrive two hours before filming starts. (Because filming requires different times for different scenes, the actor has to make sure he has enough time to complete the following steps.)
- Go through your relaxation, concentration and *magic if* explorations.
- Communicate with one component and allow the others to be activated.
- Through this preparation activate all the inner drives.

Moment of orientation and improvisation

When entering the green screen environment observe the layout of the setting. Walk through the space and become familiar with the set. Take as much time as you are allowed in the hectic filming environment, as it is crucial for the actor to spend as much time as possible in this environment. As discussed in chapter 4 section 4.3.1 number vi, this will facilitate the hippocampus in learning the space and will help to create a spatial map. This spatial map will assist the actor with the conceptual blend and will allow the body schema to function properly in the blended space. Once you are familiar with the physical setting, take the director's notes on the environment and the physical action and use them to blend and improvise within the space in the

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same way as active analysis (discussed in ch 3 section 3.2.5). This will assist in the activation and integration of the bodymind of the actor.

Stanislavsky's moment of orientation is crucial in green screen acting, because it assists the actor in preparing for the scene that follows. According to Merlin (2010:171) this is the moment for the actor portraying a character to evaluate where he is, the importance of the scene and the actions and interactions to follow, and it should not be rushed. It is in this moment that the actor should actively engage with the *magic if* strategy.

<u>The *magic if*</u>
- Once you are ready to film, close your eyes and take a few deep breaths.
- Follow the *magic if* exploration (with training and preparation this should take a couple of seconds) before action begins.

The actor should be able to create *scenic faith*, experiencing and congruency with the diegetic world.

5.4   CONCLUSION

The purpose of this chapter was to design explorations dedicated to the creation of a strategy that the actor can implement when working in a green screen environment. Attention was given to the components involved in using the *magic if*, including given circumstances, imagination, sense memory, observation, communication, concentration and relaxation. These components were explored and delineated according to the psychophysical practices of Stanislavsky and recent discoveries in the field of cognitive neuroscience. By practically exploring these components and implementing the *magic if,* it is hypothesised that the actor will gain and strengthen the ability to circumvent the challenges posed by the green screen.

The next chapter will conclude this study by summarising the knowledge gained and suggesting possible research to be conducted in the future.

CHAPTER 6
CONCLUSION OF THE STUDY

The purpose of this study was to identify and discuss the challenges the actor faces when working with green screen technology and how the notion of the *magic if* can be implemented to circumvent the challenges of the green screen. The implementation of the *magic if* has been substantiated by recent discoveries in the field of cognitive neuroscience which can assist in the application of the *magic if* when working in a green screen environment.

Chapter 2 defined the term 'green screen technology', discussed the applications of green screen and addressed its influence on the actor's work in both film and television. When portraying a character within a diegetic world, the actor has to accept the proposed circumstances and, to a certain degree, believe in the circumstances in order to be congruent with the diegetic world. When the actor is on location or surrounded by a set, he has many external stimuli to achieve the 'belief' or *scenic faith* required to effectively negotiate the scene congruently with the proposed circumstances. In a green screen environment, on the other hand, the external stimuli are minimal and the actor has to delve deeper into his own imagination to achieve *scenic faith* and be able to motivate his actions and reactions within the scene.

This chapter demonstrated that congruency between the character (as portrayed by the actor) and special effects are crucial to the success of the diegetic world. Congruency with special effects is not a novel concept for the actor and this chapter discussed the challenges that actors have faced since the inception of filmmaking with regard to visual effects and indicated that imagination has always been a crucial component when working with visual effects. The imaginary world and the actions and reactions of the character created by the actor have to be congruent with the green screen and the special effects that will be added in postproduction. Accordingly, the scene will be weakened without congruency between the actor's actions, as the character, and the diegetic world. The actor therefore needs to merge

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the director's vision with his own, which demands greater imaginative capabilities.

As indicated in chapter 2, green screen can replace any component on set, including wardrobe and body parts, set extensions or even the entire set. The 'green' is then replaced in postproduction by whatever components the director wants. Green screen is thus implemented when the director needs to combine the actor with components that are impossible to film. While portraying the character the actor has to imagine the components of the imaginary environment during filming, and not the green screen, 'as if' these components were present and real. This calls for imagining external stimuli while reacting in congruency with the diegetic scene. Accordingly, the actor has various strategies for activating the imagination and reacting 'truthfully' to a scene. This study implements Stanislavsky's notion of the *magic if* to facilitate the actor's 'belief' in the scene, to activate his imagination, to propel him into action within the green screen environment and thus to circumvent the challenge of 'experiencing' the diegetic world and reacting to it.

Chapter 3 discussed Konstantin Stanislavsky and defined his notion of the *magic if*. It then discussed the way in which the implementation of the *magic if* and its various components can assist the actor in circumventing possible challenges that can arise in green screen acting. It was posited that Stanislavsky, through his system, aimed to achieve 'experiencing' and a 'psychotechnique', both of which promote *scenic faith*. The *magic if* is a strategy that assists the actor to achieve experiencing through the body and mind, constituting a psychotechnique that will lead to *scenic faith*. The *magic if* requires the actor to investigate and accept the circumstances provided by the script, the director and anyone else involved, and then ask a simple question: "What would I do if …?". It is crucial to accept that the question activates the holistic nature of the actor by asking him to imagine his proposed circumstances (this includes environment, events and characters) and acting on these stipulations.

The *magic if* incorporates various components in the navigation of a green screen environment. These components were delineated in various subsections of chapter 3, and include:

- *Imagination* – the mental generation of sensory stimuli to create and experience the diegetic world.

- *Sense memory* – recalling memories of sensory experiences in order to stimulate the imagination and the belief in the imagination.

- *Concentration* – attention towards the diegetic world so as to stimulate the imagination and to remain within the diegetic world.

- *Observation* – observing events and experiences in order to build a repertoire of experiences which can be used when implementing the *magic if*. These observations assist in the creation of the diegetic world and reactions within the diegetic world.

- *Communion* – feelings toward the environment, objects and people.

- *Action* – action is always present, whether it is mental action or physical action. This action occurs within the physical green screen space, but has to be congruent with the diegetic world space.

- *Relaxation* – the release of tension within the actor prepares him to activate and experience the magic if and its components.

Chapter 3 indicated the importance of these components in the implementation of the *magic if* and the necessity of their subsequent strengthening. The chapter then substantiated the implementation of the *magic if* as it assists in activating the inner psychological drives of mind (imagination), will (action) and feeling. By activating one of these drives, the others will also be activated. These drives are crucial to achieving *scenic faith*. The chapter concluded by outlining Stanislavsky's active analysis, which incorporates the *magic if* in group improvisation.

Stanislavsky, in striving for a psychotechnique, built his system by observing human behaviour and functionality owing to the actor using his own body and mind to portray the character within the diegetic world. Stanislavsky developed his system around the beginning of the twentieth century and, consequently, recent discoveries relating to human behaviour and functionality need to be incorporated in the

implementation of the *magic if*. The functioning of the *magic if* and its components are thus substantiated by findings in the field of cognitive neuroscience.

In chapter 4, a review of scholarship was conducted with the intention of examining cognitive neuroscience and its discoveries as they apply to the acting principles discussed in chapter 3, specifically the *magic if*. A brief overview of the brain and its various regions and its processes provided sufficient information to substantiate this study and to understand the biological mechanisms used when implementing the *magic if* and its components. Furthermore, consciousness and its importance for the actor and his environment were also discussed.

Furthermore, chapter 4 contributed to the comprehension, use and verification of the Stanislavsky system and, more specifically, the *magic if*, by discussing the way in which contemporary research in cognitive neuroscience has enhanced comprehension of the use of imagery and its subsequent divisions as pertinent to green screen acting. Neural plasticity infers the ability to exercise and strengthen the neural networks responsible for the *magic if* and its components. The brain's multimodality and parallel processing substantiates the capability of the brain to communicate between various brain regions which assists the actor in activating the necessary maps of the various components.

The imagination and sense memory can activate the same neural patterns 'as if' the stimuli were external and 'real'. This calls for vivid sensory imagery which will affect the actor's behaviour (ch 4 section 4.3.1 nos I and II). Concentration, on the other hand, can be controlled by behaviour and works like a spotlight which will assist in achieving 'public solitude' (ch 4 section 4.3.1 no. IV). Observation, as the concept of neural re-entry suggests, allows the actor to react according to the circumstances while creating neural patterns based on behaviour (ch 4 section 4.3.1 no. V). Consciousness arises when there is a relation to an external object or environment. This relation activates neural patterns that elicit an emotional or physical response based on experience which assists the actor in acting upon the *magic if* and achieving *scenic faith*. Affordances or the environment's interactive potential also assist the actor in determining the appropriate response (ch 4 section 4.3.1 no. III). The actor's action within the physical space is determined by the actions imposed by

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the director and the spatial map created by the hippocampus. This spatial map can also create a mental space. According to the theory of conceptual blending these two spaces can be blended which allows the actor to navigate the scene (ch 4 section 4.3.1 no. VI).

The actor is a holistic being and therefore the mind affects the body and the body affects the mind. This interaction can be harnessed by relaxation and breathing to activate certain regions of the brain crucial to the implementation of the *magic if* and its components (ch 4 section 4.3.2).

Guided imagery is a technique that incorporates the components of the *magic if* and is therefore further defined and discussed. It is argued that guided imagery can assist the actor in experiencing the imaginary external stimuli, while maintaining the feeling of control. Chapter 4 argues that these components integrate into a whole when the question "What would I do if …?" is asked. In cognitive neuroscience this is substantiated by the "as-if" body states, where the brain constructs an imaginary 'false' body state and experiences this state rather than the 'real' body state. These "as-if" body states elicit feelings appropriate to the false body state. The incorporation of a false body state into the diegetic world that will supplant the green screen is crucial in achieving *scenic faith* and congruency. The hypothetical thinking of Carson's *envision brainset*, as discussed in chapter 4, also substantiates the *magic if*, as hypothetical thinking relies on 'what if'. It is then considered that the explorations that arise within this study are based on basic human functioning.

By substantiating the *magic if* using cognitive neuroscience discoveries, the actor can create and attempt explorations that will strengthen the components that are crucial to the *magic if* and its implementation. The explorations in this study, as described in chapter 5, are built on Stanislavsky's notion of the *magic if*, and concern the challenges the actor will face when working with green screen and are substantiated by the discoveries in the field of cognitive neuroscience. These explorations have been built on theoretical research and further empirical research into these explorations and their application and effect on the actor working with green screen is encouraged.

These explorations were developed with the intention of developing a strategy that could circumvent the challenges posed by green screen acting. Each exploration incorporates a different component, while maintaining the components explored in the previous explorations. More and more *magic if* components and cognitive neuroscience principles are incorporated until the implementation of the *magic if* can commence by asking "What would I do if I was the character …?". The competency model, as discussed in chapter 5, urges that these explorations should be done daily so as to achieve unconscious competence because the actor has limited time to process the diegetic world and implement the *magic if* when working on set. The chapter concludes by guiding the actor in preparing and implementing the *magic if* on the day of filming and thus provides the actor with a strategy to possibly achieve *scenic faith* thus circumventing the challenges posed by the green screen.

6.1 Shortcomings of this study

This dissertation provides a possible solution to the challenges that the actor faces when working with green screen. However, the following shortcomings of this study should be considered:

It must be acknowledged that visual effects technology is constantly changing and that the use of green screen technology may change. However it is probable, as discussed in chapter 2, that the actor will always have to use his imagination and that the green screen will be incorporated on set more frequently in the foreseeable future.

It must also be acknowledged that green screen is just one of the challenges the actor may face in the film and television industry. Other challenges, such as character development, filming continuity, working ethics and so forth that have not been discussed in this study may also influence the actor's implementation of the *magic if*. The actor has various strategies for circumventing the challenges experienced when portraying a character within a diegetic world, and this approach to green screen acting needs to connect to and blend with these other strategies.

As discussed in chapter 3, actors are influenced by sociocultural expectations and,

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therefore, acting techniques and styles will change constantly. As such, knowledge gained in this study may only currently be of relevance.

This study focusses only on Stanislavsky's notion of the *magic if* and its relevance in constructing a technique to circumvent the challenges of green screen. It does not refer to other forms of training that might be of relevance or be incongruent to the use of the *magic if* as this forms a study on its own.

Although the *magic if* and its components, as discussed in chapter 3, have been regularly implemented by the actor for many years in various working conditions, they are still evolving in line with knowledge gained in the field of cognitive neuroscience. Science changes rapidly and therefore the explorations in this study are not an end-all technique, but rather an application grounded in the understandings of neuroscience as it is viewed at present. Science and its understanding of the human brain are still developing and deepening, and therefore the *magic if* and its implementation should be revisited in time to come in the light of new discoveries.

There is the possibility that the actor may become too theoretically dedicated to the strategy developed in this study. To address this, it is crucial for the actor to focus on his character and the diegetic world and to be in 'the moment', as discussed in chapter 3. Thus one should be mindful of the fact that the implementation of a strategy while in the acting space could impede the actor's experiencing. This indicates the importance of the explorations being done daily and thus strengthening the corresponding neural maps which will assist the actor in accessing these maps unconsciously.

Moreover, in the film ensemble, the actor will work with various personalities, each with their own methods of artistic creation, which might not be congruent with the implementation of the *magic if* as discussed in this study.

The practical explorations developed in this study have not been empirically researched and are based on a review of scholarship. This allows for possible future empirical research of these explorations.

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6.2 Further research possibilities

The following topics have been identified for further research based on the current study:

- Empirical research into the explorations discussed within this study.
- The implementation of the *magic if*, as substantiated by cognitive neuroscience in this study, when attempting to circumvent other challenges that impede *scenic faith*
- The adjustment of the explorations in this study and their implementation in situations where the actor is of the opinion that he struggles to achieve *scenic faith*.

6.3 Concluding remarks

Special effects and the green screen environment are an integral part of the contemporary filmmaking process. Consequently, it is essential that the actor be able to adjust to the demands of the film and television industry. Therefore, a psychophysical strategy for green screen acting that complements and operates in conjunction with the actor's other processes is necessary. Actors who understand and are trained in film acting may benefit from this model as it supplements film acting techniques when confronted with the demands of a green screen. This researcher supports the importance of activating the imagination in order to respond to these demands successfully. The demands on the imagination differ from stage and other film techniques as the green screen not only limits or eliminates external stimuli which excites the imagination, but in edition requires congruency with the elements added in postproduction. This defines the unique approach towards imagination within this study. The importance of cognitive neuroscience for understanding and implementing a strategy such as the *magic if* to activate the imagination has become increasingly apparent to this researcher as this study has progressed. This study has served not only as a stepping stone to comprehending the actor and his brain processes, but to comprehending human beings and their

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actions in their environments, which is what actors attempt to do when portraying a character in the diegetic world.

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