

# SCIENCE MUSEUM IN A PIZZA BOX

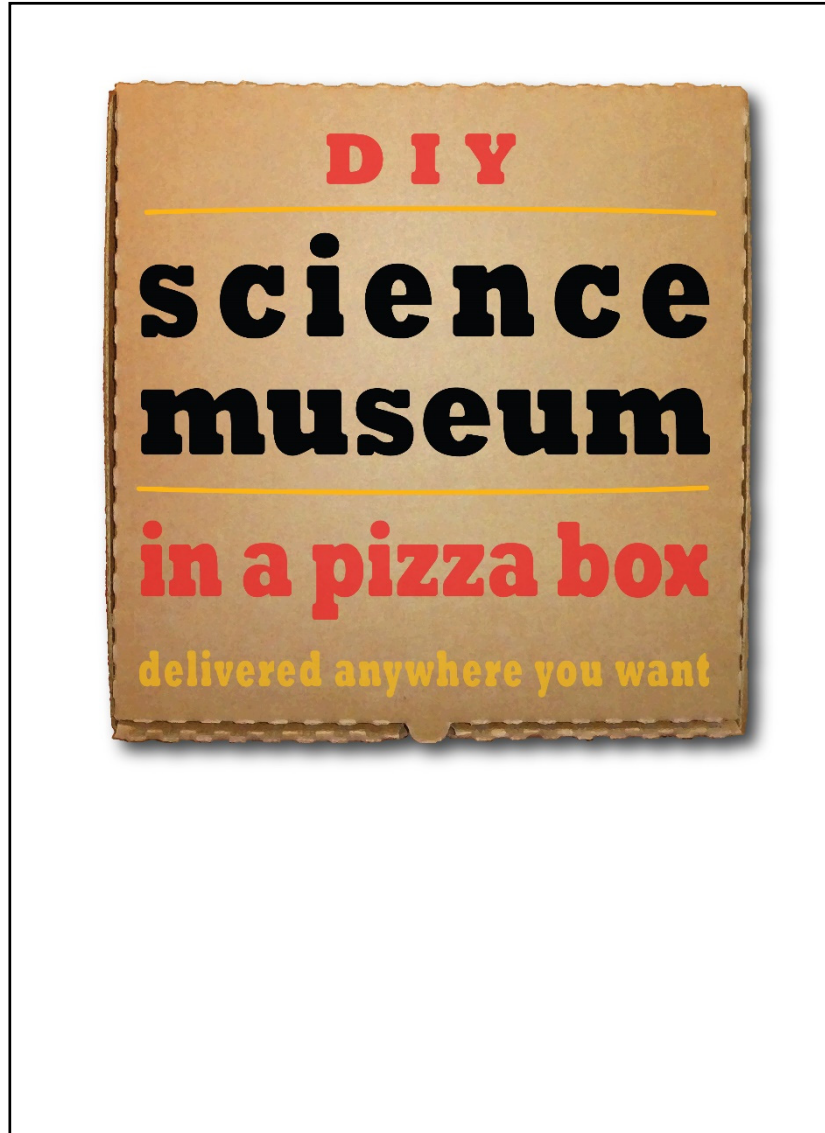
Performance, museum tour guiding, and science communication

By  
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*Figure 1: The poster for the performance (Science Museum in a Pizza Box)*





# Science Museum in a Pizza Box

## Performance, museum tour guiding, and science communication

### *Abstract*

*This study focuses on the relationship between performance and museum tour guiding. Building on the analysis of this relationship, the author of this study has created a performance that is inspired by museum guided tours. The aim of the performance is to encourage a critical reflection on the role and the function of science in contemporary society, while giving insight into how science is socially constructed. The performance is based on participation. The participants define their own experiences, actively reflecting on the value that science has in their lives through a dialogue with the other participants and the performer. This dialogue starts with exhibits based on science that are presented to the participants. To develop this performance, this research has utilised action research, and qualitative methods to explore the participants' experiences of the performance.*

*This study is interdisciplinary, and connects performance studies, museum studies and science communication, while using applied research to explore its topics.*

*The outcomes of this study are an innovative conceptualisation of the museum guided tour, and an original approach to science communication based on dialogic, live performance.*

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# 1. Introduction

## *Chapter 1 contents:*

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## *Epiphany*

Italy, on the west coast, the city of Genoa. Late summer of 2011. I am working as a tour guide for the exhibition *Race to the End of the Earth*. The exhibition presents the contest to reach the South Pole between Roald Amundsen and Robert F. Scott. The exhibition has been created by the American Museum of Natural History and is promoted by the National Geographic (see Figure 2).



*Figure 2: The entrance of the exhibition Race to the End of the Earth (©AMNH/Denis Finnin)*

As a tour guide, I am enjoying broad freedom in how to structure my tour. The training that I have received before starting guiding included three elements. First, a general meeting about the exhibition. Second, a guided tour led by one of the people responsible for the Italian version of the exhibition, which is part of the Science Festival of the city.<sup>1</sup> Finally, a document consisting of all the texts inside the exhibition, from the captions to the explanatory panels. To these three elements, I have added some stories and facts

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<sup>1</sup> The Genoa Science Festival (Festival della Scienza di Genova) is an annual showcase for science and technology. It combines different events focused on the communication of science (exhibitions, lectures, performances ...). Website: <http://www.festivalscienza.eu/site/en/home.html>

taken from Roald Amundsen's autobiography about the conquest of the South Pole (Amundsen 2007). Then, during the first days of the exhibition, I have met, before the arrival of the visitors (or between tours), with some of the other guides, to discuss what to say about a specific object, or to exchange anecdotes about some of the protagonists of the exhibition discovered in books or web sites. From this set of data (the exhibition in itself, the training, the researched information, and the shared information) and relying on my professional background as an actor and director, I am slowly crafting my guided tour.

Tour after tour, I am structuring my presentation with a beginning, a middle, and an end. I have a few jokes (close to the beginning), some dramatic moments (close to the end), and a lot of questions that I ask the visitors. I have a rough script (the captions and the stories), I have props (the exhibition objects), and several stages (carefully chosen portions of the exhibition space from which I am visible to everybody). When I get a round of applause at the end of one of my tours, I realise that I also have an audience, the visitors of the exhibition. And at that moment, a light switches on in my brain: my guided tour is a performance.

~ • ~

My research focuses on museum guided tours. It is an interdisciplinary study between performance studies and museum studies, and it is based on applied research. This PhD, then, is a practical exploration of that first intuition in Genoa: a museum guided tour can be conceptualised and created starting from the idea that a museum guided tour is a performance. To test and explore this hypothesis, I created a live performance that is a museum guided tour, the *Science Museum in a Pizza Box*. This live performance is the creative component of my research and, from an administrative point of view, it represents 40 per cent of my research while this written text represents 60 per cent of my research. This text discusses my research journey, presenting academic explorations, interviews with museum tour guides, and the creation and the analysis of the performance. However, I did not write this text as an autonomous piece, but as an active reflection on my practice, and from this perspective, the meaning of this text arises from the dialogue between this text and the live performance. With this text, then, I have tried to articulate the intellectual and creative journey that took me from my first

intuition on the link between tour guiding and performance, to the final (even if still provisional) form and definition of my performance.

In the next pages of this introduction, I contextualise my research, discussing first what a performance approach can bring to museum tour guiding. Then, I present why I chose science as the subject of my performance/guided tour. After that, I discuss my position as a researcher in relation to my topic. Finally, I describe the contents of the chapters of this thesis, providing an overview of my research.

### ***Museum and performance***

Writing about the role of theatre in British museums, Ford suggests that:

What theatre offers is a form of engagement which is able to reach in a deeper sense the hearts and minds of each individual who becomes involved through watching or participating. At the centre of theatrical activity is its relationship to real human living. (Ford 1997, 57)

This point of view suggests that a performance approach to guiding could contribute to making guided tours into interactive experiences and, consequently, could also help museums in winning visitors because, as I will shortly explain, today's visitors seek active participation.<sup>2</sup>

The first thing to which a performance approach to guiding could contribute change is guiding itself. Guided tours are traditionally defined in the academic literature as “pre-planned didactic presentations, delivered in more or less the same way each time they are given” (Camhi 2008, 276). Possibly unsurprisingly, in these didactic presentations tour guides “perceive their primary role to be that of information-givers” (Holloway 1981, 386). The consequences of the idea that a tour guide is the information-giver of

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<sup>2</sup> Even if Ford speaks about “theatre,” I suggest that his statements can be reasonably extended to what I define as performance (see my discussion of performance in Chapter 2).

a didactic presentation are problematic, because the emphasis on the delivery of information can have a detrimental effect on the guiding experience, specifically on the relationship between guides and visitors. As Holloway notes, guides can “develop an almost missionary zeal, in their efforts to arouse the interests of their passengers. Sometimes this ambition conflicts with what some, or all, of the passengers feel to be the aim of the [visit]”<sup>3</sup> (Holloway 1981, 386). From this perspective, a performance approach to guiding could enhance more interactive, personal and entertainment-oriented elements of the tour experience, transforming the relationship between guides and visitors. This could be particularly true when embracing Meyerhold’s ideas on performance.<sup>4</sup> Meyerhold considered the spectator to be a co-creator:

We will produce every play on the assumption that it will be still unfinished when it appears on the stage. We do this consciously because we realize that the crucial revision of a production is that which is made by the spectator. (Meyerhold 1969, 256)

To adopt Meyerhold’s ideas in guiding means, then, that the tour guide is no longer the executor of “pre-planned didactic presentations.” The tour guide becomes a performer engaged in an unfinished performance that finds its final form through the interactions between tour guide and visitors. Thus, the visitor is no longer the passive receiver of a prepared speech. On the contrary, the visitor becomes an active participant in the visitor-guide dialogue. The tour arises from the interactions between human beings.

The participatory nature that a performance approach can bring to guiding could help museums in winning more visitors. The entertainment market has increasingly become more crowded with different forms of leisure-time activities, and museums now have to compete for their audiences (G. Black 2005, 38). In other words, as adult visitors go to museums in their free time, museums have to compete for their visitors, because free time is limited while leisure-time options are multiplying.<sup>5</sup> As Sayre and King summarise: “Consumers today have more choices than ever in everything from TV

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<sup>3</sup> Holloway’s research focuses on coach excursions in England, hence the term ‘passengers’.

<sup>4</sup> Vsevolod Meyerhold (1874 – 1940) was a Russian theatre director, a contemporary of Stanislavski.

<sup>5</sup> My thesis focuses on adult visitors and omits any exploration of school groups or children as visitors.

programs to travel destinations to sports. Nowhere is this more evident than on the Internet [...]. And yet, although our choices may be plentiful, our time and money are limited” (Sayre and King 2010, 16). The stress that these authors put on the role that the Internet has in contemporary society is appropriate, and it adds another dimension to the landscape of the leisure industry. The entertainment market is not simply crowded, it is also changing in response to the Internet. Black, reflecting on the consequences of the Internet in the relationship between museums and visitors, explains that:

Social networking is having a profound effect on the nature and behaviour of Western society. [...] [T]he mobility of this new technology, combined with the attitudinal change it supports, means people today increasingly refuse to be passive recipients of whatever governments, companies or cultural institutions such as museums offer; instead they seek to be active members of what Scott McNealy (2005), chairman of Sun Microsystems, has declared to be ‘the age of participation’. (G. Black 2012, 3)

The idea that museums need to foster visitors’ active participation to win their audiences is not new. In 1989, Peter Vergo edited a book, *The New Museology* (Vergo 1989a). The title of this book became the label for a conceptual revolution in museum studies. The authors emphasised the need for a more dialogic, engaging relationship with the visitor, in order to create a more visitor-friendly environment, and – possibly – to increase the visitors’ attendance (Vergo 1989b, 52). Apparently, however, after twenty years the ‘New Museology’ has still not achieved its desired outcomes. According to Nina Simon:

Over the last twenty years, audiences for museums, galleries, and performing arts institutions have decreased, and the audiences that remain are older and whiter than the overall population. Cultural institutions argue that their programs provide unique cultural and civic value, but increasingly people have turned to other sources for entertainment, learning, and dialogue. (Simon 2010, i)



It is in this context that a performance approach to guiding can possibly provide a partial solution to the challenge of bringing together museums and visitors. As I have presented, a performance approach could transform visitors into active participants in the visitor-guide dialogue. Furthermore, Ford points out that in museums “[research] indicates that visitors can be encouraged to form their own opinions about events, artefacts, people and places through engagement with theatre” (Ford 1997, 57). From this perspective, then, a performance approach to guiding could be able to help museums by offering to their visitors what they are looking for: a participatory, personal and entertaining experience. Ultimately, then, a performance approach to guiding could help museums to increase their visitor numbers.

### *Choosing science*

Museums are multifarious, therefore there are probably guided tours concerned with most of the things it is possible to find not just on our planet, but also in our universe. My research, however, focuses on a specific topic: science.<sup>6</sup> I chose science for two reasons: first, science is one of the most pervasive and influential forces in Western societies and therefore is a relevant object of inquiry. Second, I believe that art (expressed in this thesis as performance) has a role as a critic of society, and that science today is so important that it has become a hegemonic force that requires critical discussion.

First, the importance of science in Western societies is a consequence of the fact that science is everywhere.

[The] world is suffused with science: scientific knowledge is imperative for the maintenance of our modern life-style; our understanding of the world often relies on modes of thinking that, at the very least, owe a debt to the tradition of

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<sup>6</sup> Following Pickering’s example, in this Introduction I use ‘science’ “as an umbrella term of a greater than usual extent” (Pickering 1995, 1). I provide a detailed definition of science in the context of my research in Chapter 2.

scientific investigation; our culture – popular, high, underground – relies on science and technology for the material means of production and reproduction [...]. Science is a central tool in the search for power, allowing us to control our environment. (Erickson 2005, 23)

It is this impressive success that science is enjoying in Western societies that introduces my second reason to discuss it further: drawing on Paul Feyerabend's analysis, I consider science as a way of thinking that has become dominant in everyday reality.<sup>7</sup> In his analysis, Feyerabend highlights how in Western societies science plays the hegemonic role that religion once played (Feyerabend 2011, 89). The hegemony of science is visible in different aspects of contemporary life. Today, to say that something is 'scientific' means that something is done in the best possible way: the heavy use of *scientism* in advertising to sell 'the best' product could be seen as a confirmation of this statement (Highfield 2005; Singer 2008). Furthermore, the people that do science – the scientists – play a role in the political scene that has no equivalent in any other social category:

In nations both capitalist and communist, the official academies of science remain the centres of power of the scientific establishment. There is no separation of science and state. Scientists play the role of an established priesthood, influencing government policies on the art of warfare, industry, agriculture, medicine, education and research. (Sheldrake 2012, 15)

In addition, scientists are often considered *super partes*, and their opinions are not infrequently framed as the unequivocal and correct explanation of an event. An example of this kind of vision has been the presence, inside the British courts, of a single version of the scientific interpretation of forensic evidence (Pallister 2005): if science reveals the *truth*, there is no need for a second opinion (Collins and Pinch 1998, 144). The consequence of the hegemony of science in Western societies is well captured by Bensaude-Vincent:

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<sup>7</sup> Paul Karl Feyerabend (1924 – 1994) was a philosopher of science. He was a colleague of Karl Popper and Imre Lakatos.

There is no alternative science. Science is unique. Thus, the world of knowledge is clearly divided into two categories: that of the scientists, who hold the monopoly of true, valid statements, and that of the rest, the numerous, anonymous, and amorphous mass forming the public. (Bensaude-Vincent 2001, 106)

The unique role that science is playing in shaping Western societies is problematic, specifically because the role of science is not being critically examined. As Wynne writes:

After seamlessly extending from *informing* policy, to *justifying* resultant political commitments, science now plays a further role – with no debate over its rights, wrongs, or conditions – as *de facto* author of public meanings, thus also of proper public concerns.<sup>8</sup> (Wynne 2014, 62)

I believe that one of the roles of art is to promote critical reflection on society. Furthermore, I think that art should promote a critical approach to the role that science plays in our lives, fostering public debate and an analysis of science from the citizens' points of view.

A guided tour on science, then, has the potential to be a performance whose subject is important because it is ubiquitous. At the same time, such a performance is important because it can offer a chance to promote a public discussion on science, and thus to critically examine the role of science (and scientists) in Western societies.

### ***Researcher perspective***

The people and ideas that I have met during my research journey have deeply influenced my study. However, my personal background has also played a role in the way in which I have explored my topic. As Richard Schechner points out in his book on performance

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<sup>8</sup> Emphases in the original.

studies: “Who I am is not irrelevant. I will be leading you on a journey. You ought to know a little about your guide” (2002, 1).

I have a mixed background. I have studied environmental science and science communication. I have spent a substantial part of my life working in theatre and visual arts, and popular forms of Italian entertainment (such as *Commedia dell’Arte*) have inspired my work.<sup>9</sup> I have also received training as a park guide.

I have approached my topic as a practitioner, and I have taken an insider, emic (Hennink, Hutter, and Bailey 2010, 14) perspective on performance and the guided tour. I have brought into this research my experiences and sensibility, and I have relied on them to shape my performance and to guide my analyses.

### ***Thesis overview***

I can describe my thesis as the journey between my first epiphany about tour guiding and performance, to the final description of my performance. In other words, from “Oh! My tour is a performance!” to:

My performance is a dialogue-based activity during which I interpret science-related objects and stories through the participants’ entrance narratives and popular theatre techniques. My aim is to entertain the participants of the performance through a critical approach to science and scientists.

This journey was long and complex, and I got lost several times. On these occasions, I retraced my steps, I explored uncharted territory, and I asked for help. In the following chapters, I provide one account of this journey: a written map of my tour.<sup>10</sup>

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<sup>9</sup> *Commedia dell’Arte* is a form of performance typically characterised by the widespread use of improvisation and a common set of stock characters, such as Harlequin and Columbine (Miklasevskij 1981, 32; Wickham 1992, 14). Dario Fo is the most famous contemporary interpreter of such a form of theatre (1991).

<sup>10</sup> The map, however, is not the territory (Bateson 1977, 221, 438).

In the second chapter, I present the conceptual framework within which my thesis exists.<sup>11</sup> I explore the academic literature on museum guided tours, and I discuss relevant topics in performance studies, museum studies and science communication. I present the research questions, and describe the methodology.

In the third chapter, I look at the interviews with tour guides that I realised in the first period of my research. These interviews increased my knowledge of the figure of the tour guide, revealing also aspects of guiding in contrast with the academic literature and highlighting the role that tour guides have in the everyday delivery of guided tours.

In the fourth chapter, I present the rehearsal process and experimentation of my performance. I discuss here how my performance has changed through experimentation and adapted to its participants. In this chapter, I present the performance from my point of view, as creator and performer.

In the fifth chapter, I analyse my performance from the participants' points of view. This analysis is based on the interviews that I realised with the participants at the end of each performance. In this chapter, I try to evaluate whether my experimentation was successful in providing answers to my research questions.

In the sixth chapter, I offer my conclusions and reflect on my findings, presenting different definitions of my performance that highlight different contributions that a performance approach could potentially bring to tour guiding.

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<sup>11</sup> Chapter 2, 3, 4, and 5 are organised in numbered 'sections', which are divided into 'parts'.



## 2. Conceptual framework

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## ***Introduction***

My research focuses on the museum guided tour on science, and specifically on the idea that a museum guided tour on science is a performance, and thus can be conceptualised and created as such. This study, then, is interdisciplinary and connects museum studies, performance studies and science communication. It is a study based on applied research that uses action research as a research strategy. It is a study with a clear focus on practice and that involves qualitative data to explore the figure of the tour guide (chapter 3) and qualitative analysis to explore its overall findings (chapter 5).

In this chapter, I present the conceptual framework within which this study exists. As the main focus of this study is the guided tour, the figure of the tour guide is explored only in relation to the guided tour. Thus, even if the floor-staff who are responsible for guided tours can have different roles within a cultural institution (from welcoming the visitors, to selling merchandise, to ticketing) only what they do while delivering guided tours is relevant in the context of this research.

To my knowledge, there is no academic article or book that specifically discusses guided tours inside science museums. The first time that science museums floor-staff were at the centre of an academic discussion is possibly during two sessions of the 2005 conference of ECSITE (European Collaborative for Science and Technology Exhibitions), as reported by Rodari and Xanthoudaki (2005). Floor-staff in museum centres are sometimes referred to as ‘explainers’ and this term defines “the innumerable people – young students mainly – who welcome visitors at exhibitions, museums and festivals, who animate laboratories and science shows, who guide, explain and lately also stimulate and manage discussions” (Rodari and Xanthoudaki 2005, 1). This definition highlights how tour guiding is just one of the activities carried out by explainers, an activity that was not addressed during the 2005 conference of ECSITE and still needs research. A subsequent article, co-authored again by Xanthoudaki (Bevan and Xanthoudaki 2008), discusses “museum educators and floor-staff” and highlights how in general these figures appear to use outdated, classroom-based practices in their relations with the visitors. The idea that guided tours are didactic



events is consistent across different authors, as I show in the first section of this chapter. Bevan and Xanthoudaki also highlight a gap between the advanced theoretical research in museology and the state of the floor practices, thus making a case for a stronger connection between research and practice that my research addresses.

The academic literature on guided tours outside museums is limited and not always relevant for my research. Specifically, there is some research in tourism studies that focuses on guided tours. However, these studies not infrequently deal with issues that are not pertinent to *museum* guided tours, as the following titles exemplify: *Condoms in the first aid kit: River guides, clients and sex* (Fluker and Deery 2003); *Social mediation in remote developing world tourism locations – The significance of social ties between local guides and host communities in sustainable tourism development* (Jensen 2010); *Public-private partnership to increase commercial tour guides' effectiveness as nature interpreters* (Roggenbuck, Williams, and Bobinski 1992). Nevertheless, there is some research in tourism studies that is relevant to my thesis. These texts focus on communication aspects of guided tours, either describing and conceptualising these communication aspects, or suggesting that guided tours can be considered as performances and understood as such.

The field of heritage interpretation can also contribute when discussing guided tours. Heritage interpretation is typically characterised by a strong focus on practice, and it has been mainly developed in North America in relation to natural park guiding. Some of its practitioners recognise that the field needs theoretical development, as emerged during the 2015 International Conference on Interpretation that I attended.<sup>12</sup> However, recent research explores and develops new, interesting directions that are relevant to my research.

As the starting hypothesis of this research is that a guided tour is a performance, I present in this chapter relevant literature in performance studies, specifically highlighting aspects of participation in performance and reflecting on entertainment in

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<sup>12</sup> *Changing Boundaries, Changing Times* – International Conference on Interpretation, organised by the National Association for Interpretation (NAI, USA) and Interpretation Canada; 3 -7 May 2015, Montréal, Canada.

the museum context. Furthermore, I explore the concept of museum theatre and science as performance.

After performance, I explore science, providing a working definition that is based on the sociology of science. I discuss how science communication shapes science as performance and how science is usually presented inside science museums and science centres.

Finally, I present my research questions and my methodology, providing also a reflection on the writing, narrative and rhetoric style that I adopt in my thesis.

## 2.1 Museum guided tour literature

In the context of my research, I define a museum guided tour as a tour that happens in relation to a heritage setting (such as a museum, a cultural institution, or a historic house) and that predominantly focuses on inanimate objects (as opposed to live animals and plants). A museum tour guide is whoever delivers such a tour. The following discussion explores academic literature relating to the museum guided tour, including its various functions.

### Museum studies

Tour guides, after security guards and receptionists, are the people that visitors are most likely to meet inside a museum. The chances of meeting a curator, or a donor, or a member of the board that administrates the museum are quite low. If visitors take a guided tour, their impression of the museum is likely to be at least partially linked with their impression of the guide. Nevertheless, despite their visibility and important role, there is little research on tour guides. As Katie Best explains:

The museum guide has not been studied to any significant degree [...]. Museums routinely use guides, a great many of them volunteers, to provide access to collections and buildings. Museums thus reach out to visitors, often at very little cost. However, guides have been neglected in literature and practice (i.e., visitor studies, museum studies, sociology and museum management). In particular, their workaday practices have been overlooked, leaving us with little knowledge of the opportunities and challenges that their work affords museums. (Best 2012, 35)

I agree with Best's statement, as during my research I have found in museum studies only two articles (in addition to Best's one) that are specifically focused on museum tour guiding (Camhi 2008; Tsybulskaya and Camhi 2009). Both these articles were published in *Curator*, an important journal on museum studies, and they share the same author, as Jeff Camhi is the sole author of one of the articles and co-author of the other.

Jeff Camhi's (2008) article "offer[s] a user-friendly catalogue of methods for object presentation by volunteer docents, professional tour guides, and guide trainers." The author lists "58 different types of communicative acts" that tour guides could use to improve their communication with visitors, as the author considers that tour guides use only limited unengaging strategies in their communication with visitors. The result is a lengthy list and the author could have possibly better communicated his ideas in a more schematic way, highlighting his principles instead of detailing each act of communication that ultimately depends on the contingency of the communication process. Nevertheless, Camhi's description of the guided tour is useful, as it highlights the potential impact that guided tours can have on visitors, while offering a clear evaluation of how guided tours are usually delivered:

The guided tour is one type of visitor experience that has great potential for both a lively presentation and a match-up with different visitors' interests and individuality. The small size of the group and people's direct encounter with the guide provide the opportunity for the guide to know something about the visitors [...] and to adjust the tour accordingly [...]. In spite of this potential, most guides appear not to take significant advantage of this option. Rather, most tours are pre-planned didactic presentations, delivered in more or less the same way each time they are given. (Camhi 2008, 276)

The concept that a guided tour can be adapted to suit the visitors' tastes and sensibilities is further explored by Dina Tsybulskaya and Jeff Camhi (2009). Their work is based on the idea that it is possible to link visitors' "entrance narratives" (Doering 1999, 81) to the specific content of an exhibit or exhibition. Visitors' entrance narratives are the interpretative frameworks, information and personal experiences that visitors bring within themselves when entering a cultural institution. Doering's thesis is that "the museums or exhibitions visitors find most satisfying are those that resonate with their entrance narrative and confirm and enrich their existing view of the world" (Doering 1999, 81).<sup>13</sup> Tsybulskaya and Camhi suggest that a guided tour that can incorporate the

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<sup>13</sup> Doering's idea resonates with Kraft, Lodge and Taber's work on public beliefs about science: "Individuals do not accept and internalize information and contextual frames irrespective of their

visitors' entrance narratives "should especially create positive visitors experiences" (2009, 82). The authors tested their idea through a well-planned experimentation, in which a tour guide asked the visitors questions in order to explore the visitors' entrance narratives at the beginning of the tour. Then, during the tour, the guide referred to the visitors' entrance narratives trying to link the exhibition to the visitors. The study found "clear signs of enhanced visitors experiences" (Tsybulskaya and Camhi 2009, 95). This article then suggests the important idea that a guided tour should link the visitors' entrance narrative with the exhibition contents if the aim of the guided tour is to create a "satisfying" experience for the visitors.

Katie Best (2012) takes a different approach to guiding, and she focuses on the verbal and non-verbal interactions between tour guides and visitors. Her article reports how "guided tours are often criticised by younger audiences for being boring and didactic" (Best 2012, 48), thus reinforcing Camhi's statements that tour guides are "pre-planned didactic presentations." Best suggests that didacticism is a consequence of the fact that guided tours have been typically conceptualised – and consequently shaped – as information-based monologues. By contrast, her direct observations of guided tours support the idea that guided tours can be described as interactive events in which the visitors' role is essential and in which the "guides have a significant and skilful role to play in audience engagement in museums and galleries" (Best 2012, 49). However, Best also recognises that at the moment guides "are not being used to their full potential" and that "tours are lagging behind and need to catch up" (Best 2012, 48) with the theoretical and practical developments in visitors studies.<sup>14</sup> This statement reinforces Bevan and Xanthoudaki's observations on the gap between floor-staff practices in science museums and the museum's theoretical development (see later in this chapter, p. 64).

## **Tourism studies**

Guided tours inside museums and guided tours outside museums are not the same type of tours. This is particularly so when guided tours outside museums are eight-hour city

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predispositions. Framing elicits different considerations related to an object, but individuals also engage in motivated reasoning consistent with their prior attitudes" (Kraft, Lodge, and Taber 2015, 125).

<sup>14</sup> For a recent and extensive description of the field of visitors studies see Lee Davidson (2015).

sightseeing, safaris, or trekking in more or less remote areas of the planet. Furthermore, tourism studies are concerned also with guiding in relation to tour management, eco-tourism and conservation. Hence, much of the literature in tourism studies that deals with guided tours is not relevant in the context of this thesis. In addition, in tourism studies the guided tour is not an extensively researched topic, thus the overall number of potential sources is limited:

Despite the importance of the role of the guided tour and the many challenges to its narratives from developments in cultural, critical and historiographical theory, the guided tour attracts little in the way of sustained and detailed critical attention within tourism research. (Jonasson, Hallin, and Smith 2013)

The first academic book devoted to tour guiding was published only in 2015. Authored by Weiler and Black, and titled *Tour Guiding Research*, the book provides an overview of the academic, Anglophonic, guiding literature mainly from 1990 to publishing date (Weiler and Black 2015, 5). The focus of the book is largely on guiding in outdoor settings, not infrequently in developing countries, and with no direct reference to guiding in museums. The authors grouped the reviewed articles according to “tourism genre” categories, with “nature-based tourism” and “adventure tourism” that combined cover 45 per cent of the reviewed papers. Only 21 per cent of the papers reviewed in the book focus on “heritage/cultural tourism,” a category that includes “heritage and historic sites, indigenous sites and host communities, and heritage attractions and museums” (Weiler and Black 2015, 9). Furthermore, the eight books that the authors identified as focused on guiding are “textbooks or manuals written *for* tour guides [...] rather than books *about* guides and guiding”<sup>15</sup> and thus provide little critical insight on guiding as these books mainly offer practical advice to novice guides (Weiler and Black 2015, 5). In their conclusions, the authors highlight how “[a]n analysis of *theoretical development* in tour guiding suggests that, up until the new millennium, tour guiding research could be characterized as being theoretically weak”<sup>16</sup> (Weiler and Black 2015, 171), and how “[m]ore work is required to investigate the extent to which guides are recruited, trained and empowered to deal with variations in role expectations and

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<sup>15</sup> Emphases in original.

<sup>16</sup> Emphasis in original.

performance” (Weiler and Black 2015, 172). The book, then, reinforces Best’s statement about how museum tour guides are “neglected in literature and practice” (Best 2012, 35), while highlighting how tour guides outside museums are also in need of research and conceptualisation.

However, a small set of articles in tourism studies deserve a close analysis in the context of my thesis. These articles deal with communication aspects of the guided tour. From a chronological point of view, these articles can be divided in two groups. The first group comprises two articles published on the *Annals of Tourism Research* in 1981 and 1985. These two articles are classics in guiding research. The second group includes some of the articles published in the special issues devoted to guided tours of the *Scandinavian Journal of Hospitality and Tourism* in 2012 and 2013. This second group of articles is linked with the work of the International Research Forum on Guided Tours and publishes the proceedings of that forum.

The title of Christopher Holloway’s seminal article is *The guided tour – a sociological approach*. Holloway, in this 1981 study on tour guides working on a one-day coach trip in England, reports that tour guides “perceive their primary role to be that of information-givers” (Holloway 1981, 386). Also Erik Cohen, in his 1985 analysis of the role of the tour guide in the tourism industry (*The tourist guide – the origins, structure and dynamic of a role*) highlights how: “The dissemination of correct and precise information is by many considered to be the kernel of the guide’s role” (Cohen 1985, 15). Nonetheless, according to Holloway the amount and/or quality of the information that a tour guide tells to the tourists is not the only element that guarantees the success of the tour:

Most guides also recognize that success in their job calls for a measure of acting ability. Each coach excursion, like a theatre performance, is a unique performance involving a different audience. That audience must be evaluated in the opening moments of contact, to sense the mood of the group and select the appropriate appeal. [...] Guides are known to experience “stage fright,” which they will manage by withdrawing from their colleagues to rehearse their performance before going “on stage,” as does an actor. (Holloway 1981, 389)

Holloway is possibly the first researcher suggesting a parallel between guiding and performing. This parallel is important to this thesis, because it grounds my epiphany on guided tours and performance in academic research (see chapter 1, p. 17). I extensively refer to this article in chapter 3, when I compare and contrast Holloway's findings with my exploratory study of eight professional tour guides in Wellington.

Holloway's detailed description of the guides' practice and of their interaction with the visitors from a sociological perspective is also an important reference point for Erik Cohen's work, to which I have just referred in the previous paragraph. Cohen's "important article on tour guides" (Macdonald 2006, 121) is the first attempt to analyse the "role of the modern tourist guide" (Cohen 1985, 7). Chapter 2 of Weiler and Black's book is devoted to the analysis of Cohen's article and subsequent articles that have criticised, modified, or implemented Cohen's work (Haig and McIntyre 2002; Mitchell 1996; Weiler and Davis 1993). Cohen identifies two main roles of the tour guide: "pathfinder" and "mentor" (Cohen 1985, 7). Pathfinder refers to the tour guide's role of shepherding visitors around places of interest, while mentor refers to the tour guide's role of providing information about places of interest. While subsequent research adds to these two roles many others, from 'leader', to 'role model' and 'organiser' (R. Black and Weiler 2005), these two roles (pathfinder and mentor) remain consistently key in tourism literature. From this point of view, it is probable that Cohen's article is the starting point of the academic trend that describes the tour guide as an information giver. This trend is criticised by Best, as I have already reported, under the assumption that if the tour guide is defined mainly as an information giver, then the guided tour becomes a monologue.

Some authors in tourism studies have joined Best in her critique of the "information-giver" model, suggesting that a guided tour is an interactive event (Bryon 2012; Jonasson and Scherle 2012; Larsen and Meged 2013; Williams 2013). All these authors are linked with the International Research Forum on Guided Tours,<sup>17</sup> and they propose the idea that the interaction between tour guide and tourists constitutes a guided tour. Interestingly, all these authors indicate a close connection between performance studies and tourism studies:

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<sup>17</sup> More information at: <http://gabcomunicacao.wix.com/irfgt-2015#!about-irfgt/cjn9>



Tours are not merely guided; they are performed as closely scripted presentations or as situated improvisations where audiences are as much the producers of the performance as their guides [...]. Thus, the distance between performance studies and tourism studies has narrowed. (Jonasson, Hallin, and Smith 2013, 85)

These authors use the concept of performance as a very broad theoretical frame to suggest a more interactive way to describe a guided tour: a way through which they can identify actors, audience, setting and so on. Nevertheless, these authors suggest the idea that a guided tour is *as* a performance, and not – as I suggest – that a guided tour *is* a performance. As one of this authors, Williams, explains:

The guided tour is not often regarded as a performance in the same way as a theatre performance, but it may be studied “as” performance because it has many performance-like aspects, and in this way it may be regarded as performative. (Williams 2013, 116)

I agree with Williams, but I also think that it is possible to suggest that a guided tour is a performance, and not just something that can be regarded “as” performance. On this point, it is also interesting to note that these authors seem to ignore contemporary forms of artistic performance (for example works from Allan Kaprow, Francis Alÿs, Adrian Piper) that since the 1960s have blurred the boundaries between art and everyday life (Frieling 2008). On the contrary, these authors have a very drama-based idea of performance, and not infrequently they choose to focus on guided tours that re-enact events from the past (Jonasson, Hallin, and Smith 2013, 86) and thus guided tours that have a strong, easily recognisable theatrical dimension. Such approaches ignore an important part of what performance is today, and also limit the extent of the considerations that these authors can formulate. These considerations focus on the interactive nature of the guided tour, as the authors suggest that the tour guide does not speak in a vacuum but in front of an audience that somehow influences the tour, mainly through non-verbal signals that have some effects on the delivery of the guided tour.

## Heritage interpretation

Heritage interpretation did not immediately present itself as a relevant field for my research. Commonly referred to as ‘interpretation’ (Roberts 2012), this field of knowledge tends to blur on-line researches with interpretation as ‘literal translation’. Also, interpretation is mostly a practice-based field whose findings are sometimes disseminated in grey literature.<sup>18</sup> Furthermore, the word ‘interpretation’ is rarely used in museum studies in a way that suggests the existence of a field of knowledge relevant for guiding.<sup>19</sup> Nevertheless, if – following Jimson – I consider “interpretation as a function rather than a specific role” (Jimson 2015, 533) it is possible to consider a tour guide as an interpreter.<sup>20</sup>

A first definition of interpretation is: “a mission-based communication process that forges emotional and intellectual connections between the interests of the audience and the meanings inherent in the resource” (National Association for Interpretation 2015). The National Association for Interpretation (NAI) suggests this definition on its web site. NAI is one of the main professional interpretation organisations (Jimson 2015, 533), and the publisher of the *Journal of Interpretation Research*. The NAI definition highlights how the communication is “mission-based” and the meanings are “inherent” in the resource. In other words, the resource is not open to visitors’ interpretations, as the point of the communication is to transmit specific information: the “inherent” meanings that the interpreter (the guide) knows and that the visitors are supposed to learn during the communication process. This approach based on information and education has been recently critiqued by Staiff (2014) and subsequently by Gilson (2015) in writing that partially relies on Staiff’s critique. Staiff, in his innovative and insightful book on heritage interpretation, supports his argument highlighting Freeman

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<sup>18</sup> The main journal about Heritage interpretation is the *Journal of Interpretation Research*. First published in 1996, this journal is peer-reviewed since 2002. The Journal is not currently included in the journal impact measurement services (Web of Science, Scopus and Google Scholar).

<sup>19</sup> For example, Eilean Hooper-Greenhill says: “In the museum context, the concept of ‘interpretation’ is generally deployed to discuss matters of design and display, with the emphasis being on the work of museum personnel, who decide on the interpretative approach” (Hooper-Greenhill 2000, 23).

<sup>20</sup> ‘Interpreter’ is one of the names used to define the people that work in contact with visitors inside a museum (Rodari and Xanthoudaki 2005, 2), thus ‘interpreter’ can also be thought of as a synonym for tour guide.

Tilden's role in defining heritage interpretation. Tilden is the most famous of the founding fathers of interpretation in North American parks (Brochu and Merriman 2008, 13; Grinder and McCoy 1985, 19). Tilden's six principles of interpretation (Tilden 2007, 34) have been highly influential since they were first formulated in 1957 and they are still regularly reported in current publications on interpretation (Jimson 2015, 531). Tilden defines interpretation as "an educational activity" (Tilden 2007, 33). Staiff, then, suggests that "because education was a key characteristic of Tilden's description of heritage interpretation, education was reinforced as a central characteristic of the interaction between visitors and heritage sites/places" (Staiff 2014, 9). This process of reinforcement occurred through the 1980s and 1990s, when interpretation collided with "the perceived environmental crisis enveloping the developed world" (Staiff 2014, 9). Interpretation then became "mission-based" to promote environmental awareness and to educate the public about sustainability. This move towards education in heritage interpretation was paralleled by a similar trend in museums:

The public museum sector had, since the nineteenth century, regarded knowledge formation as central to its mission of collecting, documenting, conserving and presenting material culture (Hooper-Greenhill 1992; Schubert 2009). More recently, museums have increasingly identified with education and learning (Hein 1998; Falk and Dierking 2000; Hooper-Greenhill 2007). Consequently, when personnel across different heritage sectors began to interact with each other in the 1980s and beyond, Tilden's ideas happily co-existed with the educational role of the museum. (Staiff 2014, 9)

The final outcome is "the now pervasive education paradigm in heritage interpretation [that] is stifling and restrictive in its own way" (Staiff 2014, 9).<sup>21</sup> As a reaction to such

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<sup>21</sup> On the same point, Verboom and Arora write: "The museum as 'academic gatekeeper' has thus given way to the museum as an 'educational gatekeeper', but maintains its authority nonetheless. Despite efforts to give the audience more voice, museum staff still consists of 'expert elites', containing museum knowledge largely within their walls in order to maintain their legitimacy" (Verboom and Arora 2013, 2).

a paradigm, Staiff suggests that heritage “is not there just to provide knowledge in a direct way,” highlighting at the same time the idea of enhancement:

For me, enhancement signals not learning but the embodied experience of ‘conjuring’ heritage *in play*, something somatic, sensual and desiring, something aesthetically engaging, something about a choreography of self *wrestling* with the materiality of places and objects. In this way, heritage interpretation is part of other realms of experience, especially the visual and the fictive.<sup>22</sup> (Staiff 2014, 68)

The consequence of this reasoning is noteworthy, because it generates a different conceptualisation of interpretation:

By placing the emphasis on the performative, heritage interpretation is changed. Rather than being a matter of communicating something to a (passive and temporary) visitor, it is the production of meaning by the visitors in their interaction with the place. In this conception – and contrary to the ‘common sense’ one – the visitor is the author of meaning(s), not the site. (Staiff 2014, 24)

Staiff, then, goes further than the researchers in museum and tourism studies that I have just discussed. While the latter suggest that a guided tour is the result of the interactions between the tour guide and the visitors, Staiff proposes that visitors are not just in relation with the tour guide (the interpreter), but that visitors are the meaning makers, the ones that have the relevant knowledge during a guided tour. From this perspective, I can propose the idea that the tour guide’s key role is that of pathfinder (Cohen 1985): the tour guide provides access to the heritage and then leaves visitors free to experience the heritage and create their own meanings. Staiff’s point of view is particularly useful in my research, as it provides a reference point for the idea that visitors are active participants in a guided tour.

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<sup>22</sup> Emphases in original.

Another author relevant to my research is Sam Ham. Ham's book *Environment Interpretation* (1992) is a classic in the interpretation literature. It is a book "written for people in the interpretation field" to explain to "them in much detail how to do practical things – such as how to plan and present a talk, lead a guided tour, design exhibits" (Ham 2013, xv). His second book (2013) also pays specific attention to the "practical things" but at the same time devotes more space to the discussion of the ideas behind interpretation. Particularly interesting is Ham's distinction between captive and noncaptive audiences:

People act according to the environment or situation they're in [...]. The classroom is a setting in which the audience has to pay attention. The park is one in which it doesn't. Boiled down to a single defining characteristic, it may be said that the students in the classroom are a captive audience because they're forced to stay and pay attention [...]. On the other hand, the visitors at the park are a noncaptive audience because [...] [i]f they decide to stay and pay attention, it will be only because they want to [...]. As long as the information they're receiving continues to be more interesting and engaging than other things around them, noncaptive audiences will pay attention to it. However, if the information loses its interest or entertainment value, the audience will switch attention to something more immediately gratifying. (Ham 2013, 11)

Ham's distinction highlights the importance of the context in defining the appropriate communication strategy. His comparison between the classroom and the park can be used to compare the classroom and the museum, with the same results: in a museum environment, visitors do not have to pay attention. Thus, even if the role of the tour guide is "information-giver," it is possible that the guide has to deliver the information in an "interesting and engaging" way. Otherwise, the audience will stop listening.

In conclusion, what emerges from this survey of the literature in museum studies, tourism studies and heritage interpretation is that guided tours are more and more frequently considered to be interactive, participatory events in which the role of the visitors is an active one. However, these considerations clash with the common practice of guiding that still bears a strong resemblance to an information-based monologue, specifically in museum settings. This gap between theory and practice highlights the

need for a more integrated, practice-based approach. I am specifically interested in exploring what happens when the guided tour is a performance, in which visitors' entrance narratives are integrated into the guided tour.

## 2.2 Performance

I define the creative part of my research (the *Science Museum in a Pizza Box*) as a guided tour that is a performance. In performance studies, the term ‘performance’ has very blurry boundaries and almost every human activity could be classified as a performance (Goldberg 2011, 9; Schechner 2002, 41; Carlson 1996, 3). From this point of view, the idea that a guided tour is a performance is not controversial. However, I am specifically interested in two features that can characterise a performance. The first is highlighted by Marvin Carlson’s distinction between doing and performing:

The recognition that our lives are structured according to repeated and socially sanctioned modes of behavior raises the possibility that all human activity could potentially be considered as ‘performance,’ or at least all activity carried out with a consciousness of itself. The difference between doing and performing, according to this way of thinking, would seem to lie not in the frame of theatre versus real life but in an attitude – we may do actions unthinkingly, but when we think about them, this introduces a consciousness that gives them the quality of performance. (Carlson 1996, 4)

From this point of view, the creative part of my research is a performance because it is a set of actions that are *consciously* performed.

The second feature that determines that the *Science Museum in a Pizza Box* is a performance is the reflection on the performance as experience elaborated by David George:

The word ‘experience’ derives etymologically from the French ‘to put to the test’. Experience is an experiment. For all too long theatre has been categorized as a form of representation when it was actually an experiment in creating alternatives. Realist theatre attempted to transform one reality into another. Performance today has liberated itself from that sterile ambition, exposing meanings as interpretations, facts as fictions and truths as constructs, returning its spectators to the primacy of experience in its first sense of experimenting

with other ways worlds might be thought of and made and acted in. (George 1996, 23)

Building on George's reflection, I then define the creative part of my research as a specific performance: a guided tour that – in exploring a critical approach to science – is a conscious experience for its participants in exploring multiple views on science (more on this in the third section of this chapter, p. 59).

It is important to note that in my thesis I use the word 'performance' in two ways. Following Richard Schechner's distinction, these two uses can be defined as the "difference between "is" performance and "as" performance" (Schechner 2002, 30). The first use identifies a work of art (i.e. the creative part of my thesis, the *Science Museum in a Pizza Box*). The second use refers to 'performance' "as an organising concept for the study of a wide range of behaviour" (Kirshenblatt-Gimblett 1999).<sup>23</sup> I employ this second use when I speak about museum as performance and science as performance.

Within the context of my thesis, the first use of the term 'performance' ("is performance") shares conceptual space with the term 'theatre', and I quote passages of texts that use the term theatre (and refer to theatre events) to discuss aspects of my performance. This conceptual overlapping is not unusual, as the common use of the term 'theatre/performance' suggests (White 2013, 3). This overlapping is also recognised by Schechner, who explains how "performance must be construed as a 'broad spectrum' or 'continuum' of human actions" and that "many performances belong to more than one category along the continuum" (Schechner 2002, 2). In the case of my performance, the two most prominent categories are 'theatre' and 'performance art'. The point, then, is not simply that I determine that the guided tour is a performance, but specifically that such performance has characteristics that can be ascribed to the realm of theatre *and* to the realm of performance art. I further explore the double nature of my performance in chapter 4, where I present, in the relevant context, further literature and I discuss how during rehearsal I have used techniques and

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<sup>23</sup> This second definition of the term 'performance' is the one commonly used in tourism studies.



concepts from both popular theatre (Schechter 2003) and performance art (Kaprow 2003).

## **Participation**

As discussed in chapter 1, a key aspect in my performance is participation. The idea is that to be an asset for the contemporary museum, the guided tour has to foster the direct and active participation of the museum visitors.

A first reference point in discussing participation is Augusto Boal and his forum theatre. In this form of theatre, the scene is staged twice. First, by the actors, and then “the scene would be staged exactly as it had been the first time, but now each spectator-participant would have the right to intervene and change the action, trying out his proposal” (Boal 1985, 140). In Boal’s theatre, then, the spectator has the chance to become actor – or, in Boal’s words, a “spect-actor” (1992, 39). This idea is interesting, but it has two limitations. First, the spect-actor is re-creating something, not participating in creating something: the first time actors perform the scene, and only later the spectator can intervene and modify the outcome of the predetermined scene. Second, the participation is limited to the spectators who take the opportunity of becoming actors.

To extend the notion of participation to the whole audience, it is possible to suggest – as Gareth White does – that “all audiences are participatory [...]. Audiences laugh, clap, cry fidget and occasionally heckle [...]. They are affected emotionally, cognitively and physically by the action they witness” (White 2013, 3).<sup>24</sup> However, White himself notes that a participatory audience is not audience participation (2013, 5). According to this author, the hallmark of audience participation is “becoming part” of the action of the performance and this – as in Boal – is not necessarily something that happens to each member of the audience. The limited participation of the audience is possibly a point without solution, as I suggest that forced mass participation is not active participation: if the audience is forced to do something, the audience is passively

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<sup>24</sup> This definition of participatory audience is the one commonly used in tourism studies when the researchers suggest that a guided tour is an interactive event (see previous section of this chapter).

following the artist's indications.<sup>25</sup> This stalemate, however, is useful in highlighting a characteristic of audience participation: audience participation can happen only through an active choice. This implies that the audience makes the decision to participate.

With this in mind, it is interesting to consider what Jeff Kelly suggests in his discussion of the role of the participant in Allan Kaprow's performance 'Happenings' and 'Activities' of the second half of the twentieth century:

Actual participation in a work of art courts anarchy. It invites the participant to make a choice of some kind. Usually that choice includes whether to participate. In choosing to participate, one may also be choosing to alter the work – its object, its subject, its meaning. In choosing not to participate, one has at least acted consciously. In either case, the work has been acted upon (which is different from thinking about acting). Though the artist sets up the equation, the participant provides its terms, and the system remains open to participation. (Kelley 2003, xviii)

Hence, in Kaprow's works participation is not the mental, solipsistic interpretation of an artwork or concept: participation means to actively interact with an artwork, and not just to look at an artwork or performance. The idea that participation is linked with choice and active action has been an important concept during the creation of my performance.

## **Performing in museums**

Following the distinction between "is" performance and "as" performance that I have presented in the first part of this section, it is possible to explore performance in two directions in the museum context.

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<sup>25</sup> On this point, it is worth noting what Zaiontz says about her experiences as a spectator: "Over the last decade, much of my own spectatorship has consisted of a steady diet of participatory work involving sharing the space of art with performers. I have rarely found this experience democratic, since I am usually directed to do specific tasks or move through a performance site in specific ways" (Zaiontz 2014, 406).

The first direction that I discuss deals with the actual doing of theatre/performance events inside museums. These events are usually identified as ‘museum theatre’ or ‘live interpretation’. These two labels largely overlap and there is no clear distinction in their use: the field is still highly fragmented, and a common terminology is still to be found. Theatre/performance events have received limited attention in research:

The use of performance in heritage contexts has, for many years, been the subject of much comment and controversy, in popular and academic discourse alike, but the focus of relatively little sustained research. Its practice has often been *ad hoc*, and its evidence base anecdotal. (Jackson and Kidd 2011a, 1)

However, there are a few books that focus on theatre/performance events performed inside museums. Tessa Bridal’s *Exploring museum theatre* (2004) is mainly a manual to help museums to create theatre programmes, and offers little critical insight into this practice. A similar, practical approach animates several of the papers of the 1994 international symposium *The language of live interpretation*, published in a book edited by Jean-Marc Blais (1997).<sup>26</sup> The texts that constituted this publication deal with the use of specific theatrical techniques in museums or with case studies of theatre events inside museums. De Fazio (2012) and Hughes (1998) have a more theoretical approach. The two authors present case studies that aim – and partially achieve – to prove through qualitative analysis the usefulness of theatre as a medium to engage museum visitors. Susan Bennett (2013) presents participatory events inside museums through a wider approach that discusses the similarities and differences between theatre and museum audiences. In her book, she suggests that “[i]t is both production and reception components that generate meaning and stimulate pleasure” (S. Bennett 2013, 22). Hence, she stressed the importance that audiences play when experiencing a theatre/performance event inside a museum. Her position is interesting because it resonates with Staiff’s idea that the visitors are the ones creating meanings when touring a heritage site. Finally, Jackson and Kidd (2011b) aim to create a reference point for the field with the book that they have edited. The papers that constitute this book offer

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<sup>26</sup> *The Languages of Live Interpretation* – International Symposium, organised by the Canadian Museum of Civilization; 7 - 10 May 1994, Gatineau, Canada.

a mix of case studies and theoretical reflection on the theme of theatre/performance in museums and heritage sites. This book, then, explores performance as both “is” performance and “as” performance. One of the contributors of this book, Paul Johnson, interestingly reflects on the type of theatre/performance that museum visitors are more likely to experience:

Although museums and heritage sites have responded to ‘The New Museology’ in radical and profound ways [...], performances in these sites have not always responded [...] to the same extent. For instance, though there could be in theory a postdramatic museum theatre, which does not operate through dramatic representation but which subverts or substitutes the component parts of dramatic theatre (plot, character and dialogue), in practice this is not common in the field of performing heritage. (P. Johnson 2011, 54)

As in tourism studies, drama is the most commonly referred to form of theatre/performance, while performance art is ignored.

Museum theatre in science museums is no exception to this situation. For example, the Museum of Science of Boston has offered drama to its visitors for more than twenty years (Baum and Hughes 2001). Also, the National Museum of Science and Technology of Canada considers drama to be the reference form of performance (Hauser 1997). This phenomenon is perplexing, because performance art could be a reference point for cultural institutions that look for strategies to engage with their audiences, given the strong emphasis on participation that a considerable part of performance art has had in the last fifty years (Bishop 2006; Frieling 2008). In particular, the work of Allan Kaprow (Getty Research Institute 2014; Kaprow 1966; Kaprow 1967; Kaprow 2003; Kaprow 2011; Meyer-Hermann, Perchuk, and Rosenthal 2008; Rodenbeck 2011) is a useful, well-documented reference point of experiments in participation. According to Schechner, Kaprow “wanted to demystify art, debunk the establishment that controlled museums, and make art that could be performed by anyone” (Schechner 2002, 139). This description of Kaprow’s work resonates with the idea of a critical approach to science that I present in the third section of this chapter. Kaprow worked on blurring the distance between art and life, while promoting actual participation: “Instead of making an objective image or occurrence to be seen by someone else, it was a matter of doing something to experience it yourself” (Kaprow

2003, 195). Following Kaprow's ideas, a guided tour could become the active experience of the museum: the experience of art (or the experience of science – I discuss how this could be possible later) instead of looking at the museum exhibits. Kaprow is an ideal reference point because he has dealt with everyday situations, while other artists have explored situations that involve extreme forms of physical participation that can be off-putting in the context of a guided tour.<sup>27</sup> Furthermore, Kaprow was himself an academic and he extensively wrote about his work, thus giving a direct access to his research.

In conclusion, 'museum theatre' and 'live interpretation' are not forms of theatre/performance relevant to my research, because if a guided tour becomes drama, it is no longer a guided tour but a theatre show with a distinction between actor and spectators. By contrast, Allan Kaprow's works are a useful inspiration in building a guided tour that is a performance that focuses on participation while avoiding creating an actor/spectator relationship between the tour guide and visitors.

The second direction in which I explore performance in a museum context is using performance "as an organizing concept" (Kirshenblatt-Gimblett 1999). Specifically, I consider exhibitions *as* performances, building on Kirshenblatt-Gimblett's suggestion that "exhibitions are fundamentally theatrical, for they are how museums perform the knowledge they create" (Kirshenblatt-Gimblett 1998, 3). Kirshenblatt-Gimblett's observation is echoed by Holtorf's: "historic objects are not innately meaningful but become meaningful only when they are socially constituted in a particular way, for instance through a performative act" (Holtorf 2006, 102). As Smith suggests, these reflections can be further extended, from objects and exhibitions, to the entire concept of heritage:

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<sup>27</sup> For example: Marina Abramović's *Rhythm*; Yoko Ono's *Cut Piece*; or Valie Export's *Tapp- und Tastkino*. In all these works, the audience is asked to actively participate in the performance by physically interacting with the performer's body. Abramović "invited the audience to do whatever they wanted to the artist's body" (Frieling 2008, 112). Ono offered to the audience the possibility of cutting small pieces of her clothing with scissors. Export strapped to herself a veiled box and invited the audience to experience through touch the "film" (Frieling 2008, 110) of her naked breasts.

As a subject of international treaties, conventions and charters, and the subject of national laws and policy programmes, heritage is often defined as a thing of value – something to be cherished, managed, conserved or curated. There is, however, no such *thing* as heritage. Rather, heritage is a cultural performance that occurs at, and with, heritage sites or museum exhibitions. It is a process of remembering and forgetting, and while particular ‘things’ or spaces may be used as tools in that remembering, it is not the things or places that are themselves ‘heritage’. Heritage is a process or a performance, in which certain cultural and social meanings and values are identified, reaffirmed or rejected, and should not be, though it often is, conflated with sites or places [...]. The idea of heritage as performance [...] is based on the premise that all heritage is intangible, in so far that heritage is a moment or process of re/constructing cultural and social values and meanings. Heritage is a way of seeing and feeling.<sup>28</sup> (Smith 2011, 69)

From this point of view, a museum guided tour is the actual performance of the cultural performance of a museum exhibition. Thus, if visitors participate in such a guided tour, they are not just participating in a performance, but they are also participating in a cultural performance and thus creating heritage. This idea is useful, because if it is possible to find a way for visitors to actively participate in a guided tour, they will participate in creating (performing) heritage.

## Entertainment

Following the idea that a museum exhibition is a cultural performance (and a guided tour the performance of that performance), it is interesting to explore which kind of performance the museum exhibition (and the guided tour) is. In this context, Paul Greenhalgh’s reflections on the Great International Exhibitions (Greenhalgh 1988; Greenhalgh 1989) are interesting, specifically when compared with Staiff’s observation on the dominant role of education in the contemporary museum (see this chapter, p. 39). Greenhalgh explains that:

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<sup>28</sup> Emphasis in original.

Resolutely and consistently, education and entertainment were understood to be not the same thing. The one was inextricably bound up with work, the other with pleasure [...]. Commentators, more self-conscious than ever of the educational mission of exhibitions, were noticeably disturbed by evidence that the masses were taking hold of the occasions and transforming them into holidays [...]. The public was well on its way to appropriating the medium for its enjoyment, not for intellectual betterment. (Greenhalgh 1989, 84)

Greenhalgh links “the dichotomy of education and entertainment” with the puritan conceptualisation of work, highlighting how “cultural activity signified knowledge, knowledge signified education, education signified work.” And work meant “puritanism and moral suffering, sacrifice in anticipation of an ultimate joy” (Greenhalgh 1989, 87). The consequence of this conceptualisation is that each part of the exhibition has to support (to perform) the “moral improvement” of the visitors. While most of Greenhalgh’s reasoning is rooted in the analysis of the International Exhibitions close to the turn of the twentieth century, he also suggests how his findings are still relevant in contemporary museums (1989, 95) and thus how the dichotomy of education and entertainment is still present. His suggestion is echoed by Falk *et al.* who describe how “To the academic, ‘education’ connotes importance and quality, while ‘entertainment’ suggests vacuousness and frivolity” (Falk, Moussouri, and Coulson 1998, 117). A further proof of the contemporary relevance of this issue is the heated discussions about ‘edutainment’ and ‘Disneyfication’ of heritage (Hollinshead 1998; Okan 2003; Howie and Sawyer 2010): these discussions are not infrequently centred on how entertainment is spoiling important things such as education and heritage. This dichotomy between education and entertainment is particularly interesting if it is put in relation to “the now pervasive education paradigm in heritage interpretation [that] is stifling and restrictive in its own way” (Staiff 2014, 9). It appears, then, that if in a museum setting there is a choice to make between performing entertainment or performing education, the latter is preferred.

Such dichotomy, however, appears to be an intellectual construct more than a reality, specifically from the visitors’ points of view. Packer and Ballantyne did an extensive study on the relationship between education and entertainment in educational leisure settings in Australia. Their conclusions are that:

The findings of the present study imply that what happens in educational leisure settings, and indeed what people seek, is not a combination of two distinct experiences – education and entertainment, but rather an experience in which education *is* entertainment, discovery *is* exciting, and learning *is* an adventure. Visitors perceive these as elements of the same construct, distinct from both effortful learning and passive enjoyment.<sup>29</sup> (Packer and Ballantyne 2004, 68)

Packer and Ballantyne's findings are echoed and extended in the museum setting by another study. This study, done by Falk, Moussouri and Couldson (1998), explored how visitors with different agendas had different experiences of an exhibition that presented gems and minerals. The study had a specific focus on the education versus entertainment debate. The authors describe how "Most museum visitors see no apparent conflict between fun and learning" (Falk, Moussouri, and Coulson 1998, 117).<sup>30</sup> Furthermore, the authors highlight how entertainment played a key role in the visitors' learning process:

Individuals with a high entertainment motivation spent significantly longer in the exhibition than did individuals with a low entertainment motivation. Thus individuals who placed a high value on the entertainment and enjoyment aspects of an exhibition spent more time in the exhibition and demonstrated a greater learning than did those who were less concerned with entertainment. (Falk, Moussouri, and Coulson 1998, 115)

In the context of my research, these findings mean that the cultural performance of a museum exhibition should not be either educative or entertaining, but both *at the same time* (and the same goes for the guided tour). However, such performance is problematic

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<sup>29</sup> Emphases in original.

<sup>30</sup> These observations in museum studies are paralleled by Brecht's observation in theatre. Brecht, speaking about his work and reflecting on "theatre for pleasure vs. theatre for instruction" commented how: "Generally there is felt to be a very sharp distinction between learning and amusing oneself. The first may be useful, but only the second is pleasant [...]. Well, all that can be said is that the contrast between learning and amusing oneself is not laid down by divine rule; it is not one that has always been and must continue to be [...]. Theatre remains theatre even when it is instructive theatre, and in so far as it is good theatre it will amuse" (Brecht 1965, 72).



to define, specifically because it is not easy to define what an entertaining performance is in the first place. Schechner proposes that:

Entertainment means something produced in order to please a public. But what may please one audience may not please another. So one cannot specify exactly what constitutes entertainment – except to say that almost all performances strive, to some degree or other, to entertain. (Schechner 2002, 39)

Further to this point of view, a possible solution to this issue is to build the performance around the audience. In other words, to put the audience at the centre of the performance and to improvise according to the audience's expectations. An entertaining performance, then, is not a comic, or dramatic, or educative performance, but a performance that meets its audience's expectations. In this scenario, it is possible that the simplest way to achieve this result is to have an audience of one. This idea animated my experimentations, and I explored different sizes of audiences to discover feasibility, similarities and differences of a performance improvised around its audiences.

## 2.3 Science

In contemporary Western societies, science is an integral part of everyday life as well as a guiding principle in world changing decisions (Bensaude-Vincent 2009, 361; Erickson 2005, 23; Sheldrake 2012, 15). From this point of view, science is a defining part of Western culture (and by extension and contrast, science is part of the cultures that have been exposed to Western culture). Nevertheless, “Pinning science down is difficult,” as Patricia Fara states in her book about the history of science (Fara 2009, xvi). Richard Feynman, a highly influential Nobel laureate in physics and a member of the Manhattan Project,<sup>31</sup> suggested a definition of science, during a public lecture, which represents an interesting starting point for my research:

What is science? The word is usually used to mean one of three things, or a mixture of them [...]. Science means, sometimes, a special method of finding things out. Sometimes it means the body of knowledge arising from the things found out. It may also mean the new things you can do when you have found something out, or the actual doing of new things. (Feynman 1998, 5)

This definition of science is useful because it highlights the multifaceted nature that science has. Feynman pointed out how science can be defined as method, as knowledge, and as technology, and how these things are not mutually exclusive. This composite definition of science is useful in my research, because it is a good reference point for the unspecific way in which the word ‘science’ is frequently used in everyday conversations, thus the kind of conversations that might happen inside an exhibition or during a museum guided tour.

However, Feynman’s definition ignores how science does not exist in a vacuum, but within a society. As Fara writes: “what counts as a scientific fact depends not only on the natural world, but also on who is doing the research – and where and when” (Fara 2009, xvii). From this point of view, when describing science it is useful to

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<sup>31</sup> The Manhattan Project was: “the secret US scientific plan, which was started in 1942, to develop an atom bomb” (Mayor 2009a).

consider also authors that have discussed how science (and scientific knowledge) is socially constructed (Feyerabend 1993; Haraway 1989; Knorr-Cetina and Mulkay 1983; Latour and Woolgar 1979). Thus, following this tradition of thinkers, it is possible to suggest that:

[...] science as a whole, the science of our societies, is itself a social construct, which the whole society is involved in creating. The process of social construction of science does not result in a unitary and essential object, but in a complex, contested and contestable family-resemblance concept that holds a range of different meanings according to where it is being deployed, and by whom. (Erickson 2005, 3)

From this point of view, then, science is how, sometimes in contradictory ways, a society defines and constructs methods to know, knowledge and technologies.

### **Science as performance**

The definition of science as a social construct interestingly resonates with Smith's definition of heritage as performance (see the previous section, p. 49), thus opening the possibility of considering science both as heritage and as performance. In other words, if science "is a moment or process of re/constructing cultural and social values and meanings" (Smith 2011, 69), then science can be considered also as intangible heritage, and as such – following Smith's reasoning – a cultural performance.

Few authors have suggested the idea of science as performance. Most notably, in the context of the sociology of science, Andrew Pickering (1995) suggests that the scientific practice is the result of the alternation between the scientists' agency and the agency of the objects (machines) with which scientists deal. His central concept is 'the mangle of the practice' (Pickering 1995, 23). Pickering, then, proposes a performative science, in which "the performance – the doings – of human and material agency" (Pickering 1995, 21) are central. Pickering's ideas, together with ones from other sociologists, such as Latour (1979), have influenced researchers in the context of the history of science (Wintroub 2010, 780). In particular, Heering (2010) takes a position similar to Pickering's, and in his analysis of "the relationship between experimenter

and instruments” highlights how culture also plays an important role in shaping an experiment:

The performance of an experiment can be understood as the outcome of the interaction of the experimenter with the device in a specific cultural setting [...]. Yet, [...] there are also cases in which neither the instrument nor the experimenter can be identified as central. External factors can play a crucial role in the development of procedures and the understanding of what it is for an experiment to be performed adequately. Thus, scientific practice cannot simply be described with terms such as ‘skill’. (Heering 2010, 805)

One of these “external factors” is the audience, specifically in the context of scientific demonstrations. The audience can become part of the performance through direct participation and undermine the authority of the experimenter (performer), thus influencing the findings of the experiment (Heering 2010, 803). This reflection points towards the idea that science can be “understood not as a body of knowledge but as a network of embodied practices” (Morus 2010, 775). That is, practices that are not limited to what happens inside laboratories or universities, but that extend to the entire society, specifically through the communication of science (Bensaude-Vincent 2009, 360).

### **Science communication**

Bensaude-Vincent notes how “[s]cientific research is not split into two neat phases consisting of the production of knowledge and its communication. There is a continuum between the two, and, to an extent, the material means of communication shape the message” (2009, 360). This observation highlights how the communication of science is one of the elements that contributes to defining science, and specifically “science as a whole, the science of our societies” (Erickson 2005, 3). Science communication, then, is part of science as cultural performance. The way in which science is communicated contributes to shaping science and from this point of view, it is interesting to explore how science has been communicated to the general public.

In 1985, the Royal Society of London published the Bodmer Report (Royal Society 1985), the full title of which is *The Public Understanding of Science*. The Bodmer Report can be seen as one of the most recent attempts to foster the communication of science to the general public, specifically after the rise of modern physics and the subsequent increasing gap between science and the public (Bensaude-Vincent 2001, 109). Since the Bodmer Report, different labels have characterised subsequent models of science communication, but the fundamental idea that people are deficient in their knowledge of science has consistently been central to these models. As Brian Wynne unmercifully says:

Over 20 years of hindsight now allows us to see that this scientific presumption was also what generated and has sustained the favourite ‘public deficit model’ explanations of public dissent which scientific bodies articulated, and continue to perpetrate. These were criticised (Wynne, 1991; Irwin and Wynne, 1996), sometimes overtly abandoned by scientific authorities (e.g., May, 2000; UK House of Lords, 2000) – but then were continually reinvented in new forms, despite their stated abandonment.<sup>32</sup> (Wynne 2014, 62)

According to the deficit model, people do not know about science and if they criticise science it is because they do not understand it. It is the duty of the “scientific authorities” to teach them what science is and to explain the natural world to people. Thus, only “scientific authorities” create the ‘right’ opinion of science, while everyone else’s opinion does not count. As Bensaude-Vincent explains:

There is no alternative science. Science is unique. Thus, the world of knowledge is clearly divided into two categories: that of the scientists, who hold the monopoly of true, valid statements, and that of the rest, the numerous, anonymous, and amorphous mass forming the public. (Bensaude-Vincent 2001, 106)

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<sup>32</sup> On the same point, see also: Phillips (2011, 84) and her analysis of the convergent critiques of Wynne, Trench and Irwin on the persistence of the ‘deficit model’ in science communication; Pieczka and Escobar (2013) and their similar analysis of twenty-five years of “the discourse of public engagement in the UK.”

The deficit model is problematic, because if only some portions of society (the “scientific authorities”) are allowed to define science, then all the people that are not part of these groups are somehow excluded from society. Science plays a key role in defining reality (Bensaude-Vincent 2009, 361; Wynne 2014, 62), but if some people are not allowed to discuss science, these people are not allowed to have an active role in defining the reality in which they also live. The report *Inspired by Science* (commissioned by the New Zealand Royal Society and the Prime Minister’s Chief Science Advisor) highlights that young people think that science is “a body of recognized knowledge that has no new questions – and no place for them” (Bull et al. 2010, 8). The idea that there is only one way to discuss and define science is highly problematic even for scientists. Ian Hacking, speaking about Feyerabend’s critique of the idea of a single scientific method (Feyerabend 1993), notes how:

Single-mindedness in pursuit of any goal, including truth and understanding, yields great rewards; but single vision is folly if it makes you think you see (or even glimpse) *the* truth, the one and only truth.<sup>33</sup> (Hacking 2000)

There is, then, a need in science communication to foster a critical approach to science. A way of communicating science that allows multiple explanations and points of view on science (on its methods, on its discoveries, and on its experimenters). Consistently “[...] with the principle that you cannot protect what you do not value” (Kirshenblatt-Gimblett 2004, 57), popular ways of speaking about science need to be valued, because to value this knowledge and these opinions means to value the people that have them, and to support the idea that science is a cultural performance performed by everyone. This does not mean that science communication should support, for example, creationism. At the same time, however, science communication should not censor creationism. Science communication should present complexity and multiplicity, while

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<sup>33</sup> Emphasis in the original. Funnily enough, I discovered during my research that Feyerabend wrote an article titled “The theatre as an instrument of the criticism of ideologies” (Feyerabend 1967). I discovered also that Berthold Brecht offered Feyerabend a position as his assistant, but he refused (Feyerabend 1995, 73).

refraining from communicating any singular truth. On this, Lakoff and Johnson have a point when they say:

This does not mean that there are no truths; it means only that truth is relative to our conceptual system, which is grounded in, and constantly tested by, our experiences and those of other members of our culture in our daily interactions with other people and with our physical and cultural environments. (Lakoff and Johnson 1980, 193)

A critical approach to science is an approach that questions single explanations and single interpretations of facts, while valuing and promoting autonomous and independent thinking.<sup>34</sup> A critical approach to science reveals the cultural performance that generates science while promoting awareness and choice among members of the public (see also how I define my performance in the second section of this chapter, p. 43). This idea of a critical approach to science resonates with my opinion on the role of art in society (see the thesis introduction, p. 23). From this point of view, my performance has to find a way to communicate science from a critical perspective.

A potential solution to fostering the critical communication of science can be offered by the concept of dialogue: through dialogue the “scientific authorities” and the public could elaborate shared meanings and shared descriptions of reality. However, the concept of dialogue has been already invoked several times in science communication, for example by Sanden and Meijman (2008), and it is useful to remember that Wynne’s critique (2014) is also addressing such attempts.<sup>35</sup> As Phillips summarises, several authors suggest that “the shift towards a new form of scientific governance based on dialogue and citizen engagement is purely rhetorical or, at best,

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<sup>34</sup> From this perspective, a critical approach to science resonates with what Brecht says about his theatre: “Some exercise in complex seeing is needed – though it is perhaps more important to be able to think above the stream than to think in the stream” (Brecht 1965, 44).

<sup>35</sup> “All the uneven and sometimes wayward adventures in public engagement and dialogue over the last decade or more have generated some occasional revision of the original assumption that ‘public understanding of science’ meant only successful public assimilation and reproduction of scientific understanding of its own objects – electrons, isotopes, ionising radiation, bosons, genes, transgenes, or ‘risks’” (Wynne 2014, 66).

partial” (Phillips 2011, 84).<sup>36</sup> It is then sensible to approach dialogue as a possible way to partially improve the low degree of democracy that characterises science communication, refraining from assuming that dialogue – in the context of science communication – is an easily achievable communication strategy that will automatically solve a complex issue such as the democratisation of science.

Nevertheless, in the context of my research, dialogue seems a promising practical strategy to foster a critical approach to science communication during a museum guided tour. From this point of view, it is interesting to note how Harris (2011) describes the failure in creating a dialogic exhibition in New York based on Bakhtin’s theories:

Dialogism has been embraced implicitly by museums as a social movement despite its appearance in literary criticism as a group of connected theories, by Mikhail Bakhtin, about the formation of the self through dialogue. [...] dialogism has been changed into an ideal of communication during its transference to the museum institution, and [...] such an ideal is very difficult to achieve. Effectively, the museum produces a monologic visit experience despite its ideals of heteroglossia. (Harris 2011, 87)

As Harris notes, Bakhtin’s theories on dialogue (1981) were generated in the context of Russian literary criticism, and from this point of view these theories are not necessarily the best guidelines in a museum environment or in science communication. On the contrary, David Bohm’s reflections on dialogue (Bohm 2013; Bohm, Factor, and Garrett 2014) are rooted, on the one hand, in his professional experience as an eminent quantum physicist, and on the other hand, in his interest in the dialogue between different aspects of human life, such as science and spirituality, late in his life (Romney 2005, 9). Furthermore, Bohm actively led projects based on dialogue and he used such projects as case studies when explaining his ideas. Nevertheless, Bohm’s work is not free from idealism, and Bohm’s ideas are not the perfect formula to achieve dialogue. However, being based on the practice of the communication of science, Bohm’s ideas

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<sup>36</sup> See for example: Davies’ (2013) critique of dialogue-based events organised by the Dana Centre, London; and Kurian and Wright’s (2012) discussion of the distance between policy practice and rhetorical position of the Environmental Risk Management Authority in Aotearoa/New Zealand.



represent an important and relevant reference point in the context of this research. Bohm describes a dialogue as a process of generating shared meanings:

In [...] a dialogue, when one person says something, the other person does not in general respond with exactly the same meaning as that seen by the first person. Rather, the meanings are only *similar* and not identical. Thus, when the second person replies, the first person sees a *difference* between what he meant to say and what the other person understood. On considering this difference, he may then be able to see something new, which is relevant both to his own views and to those of the other person. And so it can go back and forth, with the continual emergence of a new content that is common to both participants. Thus, in a dialogue, each person does not attempt to *make common* certain ideas or items of information that are already known to him. Rather, it may be said that the two people are making something *in common*, i.e., creating something new together.<sup>37</sup> (Bohm 2013, 3)

During a guided tour, then, science as cultural performance could be created through the dialogue between tour guide and visitors, and through the dialogues among visitors. The process of science communication would then be based on the construction of shared meanings and not on the communication of pre-decided notions. This idea implies that visitors and tour guides should be open to the possibility of changing their minds during the guided tour, and thus arises the issue of the position of the museum during the dialogue. If the dialogue is the communication strategy of a guided tour (and the guided tour is the actual performance of the cultural performance of the museum), the museum cannot expect just to have its ideas disseminated to the public. The museum should be ready to be challenged. This can be particularly hard for a science museum, because as Bennett notes:

Exhibitions in every field adopt positions and postures, but outside science there is much more tolerance of visitors' own agendas and greater equanimity about visitors leaving unconvinced by or even hostile to the curatorial account of what

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<sup>37</sup> Emphases in the original.

they have seen. [...] [A] visitor can hardly leave a science exhibition saying that she did not “take to” the science on display and would have preferred a different one. (J. Bennett 2000, 57)

Hence, science museums could find themselves in the position of having to let go the absolute control over the interpretation of their exhibitions (and over what their tour guides say), if science museums want to move away from the deficit model of science communication and open through dialogue the interpretation of science to the whole of society.<sup>38</sup>

### Science in museums

Describing science as a performance highlights how science is an ongoing process more than a collection of results that can take the form of a collection of objects. From this point of view, when a museum wants to communicate science through the exhibition of objects, the museum faces the task of communicating the stories of those objects, and these stories are the result of long processes (performances) that cannot be simply deduced from the shape of the object itself (Vergo 1989b, 48). Hence, the museum cannot simply exhibit the objects, but has to find a way to present the stories of the objects as well. In other words, the museum needs to find a way to present the performances that have involved objects, scientists and society. Jim Bennett (2000) supports the idea that science is more an open process than a collection of results. According to him, museums have not yet found a satisfactory way to present science as a process (J. Bennett 2000, 58).<sup>39</sup> Bennett points out that only the final objects are exhibited, while the processes that created them remain hidden. Thus Bennett’s

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<sup>38</sup> In this context, a potential definition of my performance emerges when Schechner’s description of Kaprow’s work is adapted to my performance. Schechner says that Kaprow “wanted to demystify art, debunk the establishment that controlled museums, and make art that could be performed by anyone” (Schechner 2002, 139). My performance aims to demystify science, challenge the establishment that controls museums, and make science that could be performed by anyone.

<sup>39</sup> Bennett’s position resonates with Shapin’s reflections on science communication in the media. Shapin (1992) proposes that the public should know “what science is like *in the making*” [emphasis in original], stressing the difference between science as a practice and “the fables about ‘the scientific method’ so beloved of textbook writers” (Shapin 1992, 28).

conclusion is that – through the words of Richard Gregory – in science museums there is “remarkably little science” (qtd in J. Bennett 2000, 56).

To circumvent the difficulties of displaying science through objects, science centres present the visitors with hands-on exhibits. These exhibits are interactive and offer visitors something to physically experiment with in order to directly explore “the scientific phenomenon” (Simmons 1996, 83) that the hands-on exhibit should reveal, such as inertia, evaporation, or genetic mutation. According to John Durant, “The ‘hands-on’ science movement has been – and remains – the single most potent force for change in museum of science” (Durant 1996, 156). Durant highlights how, after the recognition of the effectiveness of the science centre model in attracting visitors, science museums have started to display interactive exhibits (Durant 1996, 157). From a theoretical point of view, hands-on exhibits should stimulate the visitors to engage with the abstract nature of science through real experimentation. This playful activity should prompt dialogue among the visitors about their discoveries (Simmons 1996, 85), thus achieving the re-performance of a discovery.

However, after an initial enthusiasm for interactive exhibits, researchers have started to recognise the limit of the hands-on approach. As Christian Heath and Dirk vom Lehn explain: “instantiating these [interactive] models of conduct within exhibits neglects the interests of the companions and inadvertently undermines mutual, simultaneous, collaborative engagement with the installation” (Heath and Lehn 2008, 84). Also, Peter Hodder, in his analysis of New Zealand Science Centres (Hodder 2010, 351), highlights how the public perceive science centres as places for children; this perception limits the audience that is likely to go to a science centre. Furthermore, Bennett points out how “[the science centre] insists on pure science even though visitors are more interested in its social aspect, and [...] offers fun as a means of overcoming established antipathy to school science, but [...] at the same time is based on a similar schoolmasterly attitude to learning” (J. Bennett 2000, 58). Finally, hands-on exhibits tend to be presented without any reference to the social and historical context in which the scientific principle was first discovered, thus failing to give visitors a chance to contextualise their (re)discoveries in reality (Arnold 1996, 62).

One of the strategies that has been suggested to improve science museums and science centres is live interactions with floor staff or actors (Friedman 2000, 50; Kraeftner, Kroell, and Warner 2008, 123). Arnold (1996) discusses the effectiveness of

guides and actors in engaging visitors in ways that amend the weaknesses of static exhibitions:

[...] actors and interpreters can give visitors an orientation, draw their attention to specific exhibits, evoke the lives of the people who made or used them, speculate about their effects on human lives, and open up all sorts of ethical and moral issues that are so difficult to tackle through static exhibition techniques. (Arnold 1996, 72)

His opinion is shared by Simon (2010) who highlights how the human dimension that characterises the relation between tour guides and visitors is unique in promoting interaction among visitors, and between visitors and objects:

[...] the most reliable way to encourage visitors to have social experience with objects is through interaction with staff through performances, tours, and demonstration. Staff members are uniquely capable of making objects personal, active, provocative, or relational by asking visitors to engage with them in different ways. (Simon 2010, 152)

An effective way, then, to communicate science as performance and to highlight the relations between science, scientific objects, scientists and society is through performance. From this point of view, the guided tour appears to have the potential to be the actual performance of the cultural performance that the museum carries out when exhibiting science.

Nevertheless, there are two issues linked with the idea of the guided tour as an effective way to interpret science as a process (performance). The first issue is linked with tour guides, the second with the museum as the setting for guided tours.

The first issue is rooted in the formation of the floor-staff. Bevan and Xanthoudaki note that it is possible that while the museum as institution has moved away from didacticism, the floor-staff are still using outdated models of communication:

Many museum educators and floor-staff have relevant preparation or passion in the museum subject matter but may have comparatively less pedagogical experience or expertise. The extensive literature on teacher professional development details how difficult it is for educators to move beyond the ways in which they themselves were taught. It is thus not surprising that traditional (more school-like, transmission model) approaches to knowledge and learning underpin many interactions between museum floor-staff and museum visitors. (Bevan and Xanthoudaki 2008, 109)

This issue resonates with the observation that there is a gap between the conceptual development of museum studies and the actual way in which guided tours are delivered (see also the first section of this chapter, p. 33). The idea that a guided tour is a performance could help in easing this issue. If a guided tour is an entertaining performance (see the previous reflections on this, p. 50), the tour guide is a performer whose aim is also to entertain her/his audience, and this concept can help in undermining the idea that a tour guide is a monologic teacher.

The second issue is the museum as a setting for guided tours. In contemporary Western societies, institutions are sometimes regarded with antipathy. Gauchat highlights that: “unfavourable attitudes towards science are symptoms of a broader institutional alienation or legitimacy crisis that involves public reservations about expert systems, bureaucratic authority, and political institutions” (Gauchat 2011, 755). Furthermore, institutional spaces, with their imposing architecture and their behavioural rules (do not touch/eat/run/...), rarely provide a space that is welcoming for everyone (Mayfield 2004, 118). As Wright reports about art museums: “there is still a large majority of the British public that never ventures inside because, given the art museum’s enigmatic presentational language, ‘it is not a place for the likes of us’” (Wright 1989, 142). This point is reinforced by Black who reasons that:

Although museums have transformed themselves over the last thirty years, they are still thought of by many non-users as dry, dusty places, with cobwebs on the displays, and staffed by surly, unwelcoming or even rude museum attendants who are clearly out to ensure you do not enjoy your visit. (G. Black 2012, 27)

Further to this point of view, it is possible that performing my guided tour outside a museum is a way to smooth down the antipathy that some visitors (or potential visitors) might have towards the museum. However, it would also be interesting to experiment with my performance inside museums, in order to explore how different settings might influence the outcome of the experience.

## 2.4 Research questions and methodology

In the previous sections of this chapter, I have presented literature on the topics of guided tours, performance and science, highlighting gaps and interesting directions of research. I have focused on issues of participation, exhibitions as cultural performances, and critical approach to science among others. This analysis has generated a set of questions around tour guiding and science communication. In this section, I present these questions and describe my methodology.

### Research questions

Building on the previous explorations of the relevant literature, *this study focuses on exploring through practice an engaging and effective way to communicate science from a critical perspective, specifically through a guided tour that is a performance.*

In this context, ‘engaging’ means an activity capable of involving the visitor: the visitor takes part in the event, through verbal and physical active participation. ‘Effective’ means that the visitor (participant) is not just involved in the event, but s/he is critically reflecting on science. ‘To communicate science’ is an expression that builds on the one hand on science communication as dialogue (see p. 60), and on the other hand on heritage interpretation as proposed by Staiff (see p. 39). This expression, then, refers not just to the process of communicating information, but also to the process of meaning making that visitors perform through their interaction with the tour guide and with other visitors. The ‘guided tour’ is a performance that borrows techniques not only from drama, but also from performance art, in an attempt to foster participation (as opposed to spectatorship) among visitors.

The primary question that this study aims to answer is:

How can a guided tour be an engaging and effective way to communicate with visitors about science?

The secondary questions that this study aims to answer are:

- a) The role of the tour guide is traditionally defined in the literature as an ‘information-giver’ (Camhi 2008; Cohen 1985; Holloway 1981). But a tour guide could also be defined as a performer (Jonasson and Scherle 2012; Larsen and Meged 2013; Williams 2013). If I create a guided tour starting from the idea that a tour guide *is* a performer, in what way, if any, will this change help me in engaging the visitor?
- b) Even if a guided tour is usually defined as a prepared monologue (Camhi 2008), Best (2012) observes that a guided tour is an interactive event, in which the role of the visitor is important. Nevertheless, the general structure of a guided tour is decided before the interaction between the tour guide and the visitor. If I create a guided tour in which the sequence of the presented objects is decided by the visitor, in what way, if any, will this change help me in engaging the visitor?
- c) A one-on-one, outside a museum situation could be, theoretically, a strongly favourable situation to engage with a visitor (see p. 53 and p. 66). If I perform a guided tour in a one-on-one situation, outside a museum, in what way, if any, will this change help me in engaging the visitor? And if I perform a guided tour in a one-to-many situation, outside a museum, in what way, if any, will this change help me in engaging the visitors? Does performing outside a museum help in reaching non-museumgoers?
- d) How can changes in perception be detected? And particularly: What are the visitors’ perceptions about science/scientists after my performance? Do the visitors notice a change in their perceptions? Do the visitors gain information about science that they consider useful?
- e) What are the differences between my experimentation and a traditional guided tour? And particularly: Can a guided tour realised outside a museum be successful in reaching an audience that does not normally go to museums?



## Methodology

Several of the authors that I have discussed so far have highlighted a distance between the practices that characterise guided tours and the recent theories that conceptualise the museum (Best 2012; Bevan and Xanthoudaki 2008; Jonasson, Hallin, and Smith 2013; Weiler and Black 2015). The distance between practice and theory is not limited to the guided tour, but widespread to the museum and heritage sectors (McCarthy 2015; Witcomb and Buckley 2013).<sup>40</sup>

In this context, there is a need to elaborate on an integrated model of research that combines everyday practices and theoretical innovation. The purpose of such a model is not simply to update practices by applying theories to them, but to generate a new type of knowledge that is rooted in the practice (McCarthy 2015, xviii), as theoretical criticism is often concerned only with “critique for its own sake” (Witcomb and Buckley 2013, 562) while lacking practical proposals that can inform the practices and, in turn, influence subsequent theories.

Within my thesis, practice as research offers an interesting starting point to create an integrated model of research, because:

[...] practice as research in the performing arts pursues hybrid enquiries combining creative doing with reflexive being, thus fashioning freshly critical interactions between current epistemologies and ontologies. (Kershaw et al. 2011, 64)

From this perspective, my research is constituted by its creative component and by the qualitative evaluation of it. Specifically in order to answer my research questions I designed a three steps research plan (see Table 1).

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<sup>40</sup> And possibly to the whole “Western tradition of thought” (Nelson 2006, 105).

Step	Main focus on	Based on	Described in chapter
One	Exploration of the museum guided tour	8 interviews	3
Two	Experimentation	52 performances	4
Three	Qualitative analysis	14 performances	5

*Table 1: The three steps of my research*

The first step focuses on exploring the museum tour guide through a set of semi-structured interviews. The findings of this first step contributed to the creation of my performance, the *Science Museum in a Pizza Box*, thus further enhancing how practice and theoretical analysis are closely interwoven. The creation of the performance and its experimentation constitute the second step of my research. The third and final step of my research is the qualitative analysis of my performance. Such analysis was carried out on a sample of the performances done during the experimentation.

In the following pages, I present the general methodology that encompasses the whole research, while in the subsequent chapters I explain the details of each research step (recruitment, methods of collecting data, sampling). This is because I used slightly different approaches in each step, and I detail the different specificities and limitations of these analyses directly in the relevant chapters.

In my study, I use action research as a reference strategy of research. Action research, through its cyclical nature, its self-reflectiveness, and the direct involvement of the practitioner, is the appropriate tool to develop a new practice (McNiff and Whitehead 2011, 10). Furthermore, in action research “practitioners research their own practices, which is different from traditional forms of social science research, where a professional researcher does research on practitioners” (McNiff and Whitehead 2011, 8). Action research starts with the researcher selecting and analysing a situation that s/he thinks is improvable. The result of the analysis is a hypothetical action that, once performed, could change the situation. The action is performed and the situation re-analysed. According to the result of the re-analysis, the researcher could decide to do further action. This analysis/action cycle is performed until the researcher assesses that the situation is as improved as possible in the given conditions. The researcher conducts

the analyses together with other people that are involved in the situation (Riel 2012; McNiff and Whitehead 2011, 14).

In my study, action research starts with the analysis of the guided tour. This analysis is based on two elements: my professional experience as an actor and director, and interviews with tour guides. These interviews are discussed in chapter 3, where I contextually present how I have collected and analysed the data. My professional experience and the interviews are the starting point of the first performance. I consider each performance as an action in the analysis/action cycle of the research process. After each performance, I interviewed the visitors about their experiences of the performance, in order to explore the performance from their points of view. In this way, the analysis of the performance was carried out together with the visitors who could provide critiques and comments. Starting from the visitors' analysis, I developed a different version of the performance that I then tested with other visitors. I present this part of the research process in chapter 4, where I also discuss how I recruited the visitors for my performance. In chapter 5, I explore the visitors' feedback after detailing how I sampled and analysed the data. The validity of my action research process was ensured by my supervisors, who acted as a validation group.<sup>41</sup>

Finally, in chapter 3 and 5 I used qualitative analysis because I was interested in exploring “issues from the perspective of [the] study participants, and understand[ing] the meanings and interpretations that they give to behaviour, events or objects” (Hennink, Hutter, and Bailey 2010, 9). In other words, I put tour guides (chapter 3) and visitors (chapter 5) at the centre of my analyses. My main reference point in the design and analysis of the interviews and data is Patton's (2002) classic work on qualitative research.

### **A note on my writing, narrative, and rhetoric style**

A common way of writing in academia privileges impersonal and passive constructions (Traweek 1992, 432). This way of writing is based on the idea that data exist

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<sup>41</sup> “The job of your validation group is to listen to you, scrutinize your data and evidence, consider your claim to knowledge and offer critical feedback” (McNiff and Whitehead 2011, 165).

independently from the researcher and that knowledge is rooted in objective, instrument-based observations (Lakoff and Johnson 1980, 187). This impersonal way of writing is distinctive in scientific disciplines where “all references to the agency of the scientists involved in the research are minimized” (Traweek 1996, 133). Also in the social sciences researchers are “usually expected to be scientists, collecting technical data by rigorous methods, making hypotheses and testing them, and communicating with colleagues [...] in the proper way” (Traweek 1992, 432). The idea that data exist independently from the observers has been extensively criticised, and several authors have discussed how the observers play a central role in generating knowledge (Collins and Pinch 1998; Feyerabend 1993; Haraway 1989; Latour and Woolgar 1979). However, ways of writing that acknowledge the researcher’s role have been equally criticised as not sufficiently rigorous (Ellis, Adams, and Bochner 2010), a critique particularly problematic for a thesis. I have then found myself trapped while trying to decide which writing, narrative, and rhetoric style to adopt for my thesis.

In this academic stalemate, Sharon Traweek has provided me with a solution. Speaking about writing strategies in science studies, Traweek proposes that as researchers we should “attend to our narrative structure and rhetorical strategies so that they complement rather than undermine our thoughts” (Traweek 1992, 433). As the purpose of my research is to foster a critical approach to science, my narrative and rhetorical strategies should question the impersonal approach that science privileges. This means that I should acknowledge the role of the experimenter in the collection and interpretation of the data, and favour the active voice. Furthermore, this means that I should use a qualitative and provisional language that recognises the conditions under which I have constructed knowledge through analysis and experimentation.

From this point of view, an *auto-ethnographic layered account* is an appropriate model for my writing. In an auto-ethnographic layered account the focus is “on the author’s experience alongside data, abstract analysis, and relevant literature” (Ellis, Adams, and Bochner 2010). An auto-ethnographic layered account is then able to fit, on the one hand, the need for coherence between the aims of the research and the way in which I present my research, and on the other hand, the academic rigor and analysis that a thesis requires. Furthermore, an auto-ethnographic layered account resonates with the role that I have played in this research as researcher. I have explored my research questions through a performance that I have created, performed and analysed, and in an auto-ethnography “the researcher features as intrinsic to the epistemology, her

experiences, interpretations, and critical reflexivity [...] are accepted as knowledge, linking her personal to her cultural and thus blurring the distinction between researcher and researched” (Doloriert and Sambrook 2009, 30).

In conclusion, I have decided to adopt an auto-ethnographic layered account as a model for my writing, narrative, and rhetoric style. I hope in this way to be able to accommodate the competing needs that animate my thesis: first the need for coherence of my research aims and my rhetorical style, second the need for analytical analysis of data, and finally the need to acknowledge my role in generating and analysing the data.

## ***Conclusion***

In this chapter, I have presented a survey of the relevant literature and the main theoretical reference points of my research. The literature on museum guided tours is limited. However, the idea of connecting the visitors' entrance narrative with the content of an exhibition is interesting (Tsybulskaya and Camhi 2009) and it deserves further experimentation.

While a few authors have recently suggested the idea that a guided tour can be described *as* a performance (Best 2012; Jonasson and Scherle 2012; Larsen and Meged 2013; Williams 2013), no one seems to have advanced the idea that a guided tour *is* a performance. This later idea is the starting point of my experimentation.

Important points in my framework are the ideas that both an exhibition and science can be conceptualised as cultural performances (Erickson 2005; Kirshenblatt-Gimblett 1998; Latour and Woolgar 1979; Smith 2011). From this point of view, heritage and science can be described as socially constructed. Fostering the possibility of taking part in the creation of such cultural performances is one of the aims of my performance.

Drama is the main reference point for live events in the museum setting (Baum and Hughes 2001; P. Johnson 2011). However, performance art has been extensively experimenting on participation (Bishop 2006; Frieling 2008), and thus it should represent a significant reference point for the cultural institutions that want to put the visitors at the centre of their activities. Particularly, Allan Kaprow's research is interesting (Kaprow 2003), given his focus on active participation and on everyday life.

In the following chapters, I present and analyse my research, building a dialogue between the theoretical framework that I have proposed in this chapter and the practical experimentation through which I have explored my ideas.

### 3. Interviewing museum tour guides

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## ***Introduction***

In the previous chapter, I have discussed how the figure of the museum tour guide has received little attention in academic research. This paucity of information prompted me to attempt a direct exploration of the figure of the museum tour guide. Specifically, in this chapter, I present interviews with museum tour guides that I realised in Wellington (New Zealand) during my research. The first aim of these interviews was to study museum tour guides and museum guided tours in order to broaden my knowledge about them and about their job. The second aim was to gather information and considerations that I could use to create my performance; in other words, I was asking myself: “What can I pick up from tour guides to help me create a performance that could answer my research questions?”

The data that I present in this chapter are the result of a qualitative study based on eight semi-structured interviews with museum tour guides.

The key reference for my study was Holloway’s seminal research on one-day guided coach excursions in England (Holloway 1981). I used Holloway’s study to shape my methodology, and to compare and contrast my findings. I chose Holloway’s study as a reference point for two reasons. First, his findings are highly influential and used in subsequent studies on tour guides (Cohen 1985; Larsen and Meged 2013). Second, Holloway’s research focuses on what the tour guides do and how tour guides interact with the tourists. From this point of view, Holloway’s study resonates with the performance studies perspective that I have used in my research, thus with a specific emphasis on “action, interaction, and relation” (Schechner and Brady 2013, 30).

In this part of my research, I aimed to recruit for maximum diversity (Patton 2002, 234). In other words, I tried to include in my research as many cultural institutions as possible, in an effort to find shared experiences in tour guiding and thus to highlight common traits of museum guiding. My criterion for selecting cultural institutions was twofold: on the one hand, the institution had to offer guided tours all year round; on the other hand, the institution had to use paid staff in delivering the tours. I chose this criterion because I wanted to focus my study on tour guides that practised guiding as a profession. Two factors influenced my recruitment process. First, not every cultural



institution in Wellington matched my criterion (and not every cultural institution that did match my criterion was interested in taking part in this study). Second, I had a limitation on the amount of time that I could devote to this part of my research. In conclusion, I interviewed tour guides that worked in three cultural institutions: the Museum of Wellington City and Sea, the National Library, and Parliament. I reached saturation point after eight interviews.<sup>42</sup> Tour guides took part in this research on a voluntary basis. The cohort did not comprise the same number of tour guides from each institution (Museum of Wellington City and Sea: two participants; National Library: one participant; Parliament: five participants). In the following table, I present three characteristics of the participants: the institution in which the guide worked, the years of experience in guiding, and if the guide worked part-time or full-time (see Table 2).<sup>43</sup>

Code	Institution	Year(s) of experience	Part-time / Full-time
Lydia_C&S_1	Museum of Wellington City & Sea	Around 1	Part-time
Sarah_C&S_1	Museum of Wellington City & Sea	Around 1	Part-time
Tim_Lib_10+	National Library	More than 10 (less than 15)	Full-time
Rosy_Parl_5+	Parliament	More than 5 (less than 10)	Part-time
Dick_Parl_5+	Parliament	More than 5 (less than 10)	Full-time
George_Parl_10+	Parliament	More than 10 (less than 15)	Full-time
Ted_Parl_15+	Parliament	More than 15	Full-time
John_Parl_15+	Parliament	More than 15	Full-time

*Table 2: Codes and characteristics of the participants of the study*

<sup>42</sup> “The number of participants to recruit for qualitative studies is guided by a theoretical principle called saturation [...]. This is simply the point at which the information you collect begins to repeat itself. After reaching information saturation, further data collection becomes redundant because the purpose of recruitment is to seek variation and context of participant experiences rather than a large number of participants with those experiences” (Hennink, Hutter, and Bailey 2010, 88).

<sup>43</sup> Each participant is identified by a code that summarises two key characteristics: the participant’s institution and the participant’s experience. For example, Lydia\_C&S\_1 identifies a tour guide that works at the Museum of Wellington City and Sea (C&S) and has one year of experience (1). Participants’ names have been changed to preserve anonymity.

Full-time tour guides with more than ten years of experience constitute half of my cohort. This significant presence of seasoned guides is a strength in the context of the qualitative analysis of this small-scale study, as my aim was to explore the everyday practice of the guiding job, while I was not concerned with demographic considerations about museum tour guides.

I realised the eight interviews between May and June 2013. Each interview was audio-recorded after a ‘general introduction’ one-hour guided tour in which I was among the visitors.<sup>44</sup> After transcribing the interviews, I first grouped the answers according to the respective questions. Then, and with help of NVIVO software, I coded and regrouped the answers according to nine themes that emerged from the interviews and that were relevant to my research. These themes correspond with the sub-headings of this chapter.<sup>45</sup> In the following table, I present the set of open questions that I used during the interviews (see Table 3). These questions were developed starting from my personal experience as tour guide.

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<sup>44</sup> A ‘general introduction’ tour is usually a tour aimed at first-time visitors. The tour typically covers what the institution considers are its most important pieces.

<sup>45</sup> Background, training, status, communication strategies, a successful tour, group dimension, museum tour guides’ role, visitors’ role, interactions.

1 <sup>st</sup> question	How long have you been a tour guide?
2 <sup>nd</sup> question	What do you enjoy about being a tour guide, what do you find challenging?
3 <sup>rd</sup> question	Which type of training have you received (if any) to work as a tour guide?
4 <sup>th</sup> question	What would you consider a successful guided tour and how would you know/judge that it went well?
5 <sup>th</sup> question	Tell me about a tour where you felt the visitors were really engaged (emphasis on what s/he was doing).
6 <sup>th</sup> question	Speaking about today, what was your main goal during this guided tour? Is it always this or do different tours have different aims?
7 <sup>th</sup> question	To deliver accurate information (such as historical/scientific facts) versus to engage the audience. How would you describe the relation between these two aims?
8 <sup>th</sup> question	What is the role of the visitor during a guided tour?
9 <sup>th</sup> question	Which strategies do you use to keep the visitor's attention during a guided tour?
10 <sup>th</sup> question	Which type of training would you recommend (if any) to work as a tour guide?
11 <sup>th</sup> question	If you were responsible for the guided tours in a museum (or a cultural institution), how would you structure the way in which guided tours are carried out?

*Table 3: Questions used during the interviews*

This study of the figure of the museum tour guide has two limitations. The first limitation is linked with the qualitative nature of this study: the findings of this study cannot be simply generalised to apply to every museum tour guide, as the interviewees were not a statistical representative sample of the museum tour guides that work in Wellington (or anywhere else). The findings of this study, then, need to be compared and contrasted with the relevant academic literature to establish the extent of their value (I present these comparisons in the following pages).

The second limitation is linked with the specific nature of the institutions in which the interviewees worked. The general subject of my thesis is the communication of science through a museum guided tour. However, none of the three institutions in which the interviewees worked was a science museum. The only institution in Wellington that displays a significant collection of science-related artefacts, Te Papa

Tongarewa, was undergoing an extensive renovation programme at the time of my interviews, and my attempts to involve them in my research failed. The second limitation of this study, then, is that my findings are not specific to science museums or to the communication of science. Nevertheless, the emphasis in this study is on what tour guides do and how guided tours work, and from this perspective I think that there are more similarities than differences among institutions that promote different subjects.

I have divided this chapter in three sections. In the first section, I explore the figure of the tour guide, trying to understand who the people that practise guiding are. In particular, I discuss the tour guides' backgrounds, then I examine the tour guides' training, and finally I present the tour guides' self-perceived status.

In the second section, I discuss the guided tour from the tour guides' perspective, with a specific emphasis on three themes: the communication strategies that tour guides use during a tour, what makes a guided tour a successful one, and how the dimension of the group influences the tour. In this second section, my focus is on how a guided tour works.

In the third section, I examine the tour guides' role and the visitors' role during a guided tour: specifically, I first present the role of the tour guides, then I present the role of the visitors, and finally I discuss the interactions between tour guides and visitors. My aim, in this last section, is to explore the relationship between tour guides and visitors, and how this relationship shapes the guided tour.

### 3.1 Museum tour guides

In this first section, I focus on museum tour guides. The general question that drives my study in the following pages is: “Who is a museum tour guide?” In answering this question, I examine three specific aspects of the tour guide. The first aspect is the tour guide’s background. I explore this aspect to gain some insight on where guides come from. The second aspect that I explore is the tour guide’s training, in order to understand what skills a cultural institution considers important to develop in a tour guide. The third and last aspect is the tour guide’s self-perceived status. I discuss this aspect because I am interested in discovering what tour guides think about themselves and their profession. The overall aim of this section is to enrich my knowledge of tour guides.

#### Background

In this first part, the research question that I attempt to answer is: what background do museum tour guides come from? My aim is to try to understand whether museum tour guides come from a specific background, or if they are from every walk of life. A first quote that contributes in answering my research question is the following:

I think that people that have been in acting, teaching, public speaking are probably going to find it easier to do this job. I was in the broadcast industry myself, so it’s communication. Anyone who has been in that area usually is a better placed person to be a tour guide. John\_Parl\_15+

This quote does not clarify whether tour guides come from a specific background, but it suggests the idea that some backgrounds (“acting, teaching, public speaking”) better resonate with the tour guide profession. Interestingly, this tour guide’s opinion matches Holloway’s consideration on the guides’ background in Britain: “Since guiding involves elements of both teaching and acting, it is unsurprising that many of the official guides in Britain are drawn from one of these two backgrounds” (Holloway 1981, 389). My cohort, within its limits, further support this idea: six out of eight of my participants

have a background either in performing or in teaching. However, this “unsurprising” trend is not universal, as another guide points out how:

I am always surprised at how many people are employed to be tour guides when actually the idea of speaking in public is quite new to them. But it happens, it happens all the time. And most of the time I think it is because that individual is maybe a junior academic with some sort of background knowledge of the specific subject matter. Tim\_Lib\_10+

This guide’s observation finds some validation in the situation that Bevan and Xanthoudaki described when speaking about the science museum in Europe: “In the EU, floor-staff are commonly young science graduate students who hold part-time jobs at the museum” (Bevan and Xanthoudaki 2008, 114).

What seems to emerge from these quotes and references, then, is that museum tour guides come mainly from two types of backgrounds. The first type of background is related to what could be generally defined as public speaking. This type of background possibly resonates with the nature of the guiding profession – as Holloway points out. The second type of background is related to the specific subject that the institution that employs the tour guide displays. For example, science museums that employ “young science graduate students.” In other words, these two different types of backgrounds suggest that tour guides generally come from a background that either is appropriate when considering the guide as a public speaker, or is appropriate when considering the guide as an expert. This double way of thinking about the figure of the tour guide reveals two distinct – but not necessary competing – aspects of the guiding profession. The first aspect is related to the ability of skilfully speaking in public. The second aspect is related to the detailed knowledge of a specific subject. I further explore these two aspects in the following part.

## **Training**

In this part, I discuss the tour guide’s training. Through the discussion of this topic, I examine whether the two aspects of the guiding profession that I have identified in the previous section (public speaking and detailed knowledge) are present in the tour

guide's training. What I try to understand is whether these two aspects (if present) are equally developed during the training or whether one of these aspects receives more attention during the instruction of tour guides than the other.

In a tour guide's training, learning information seems to have a central role. The following quote well represents a general trend in my sample:

Well, first of all they learn the information that we have available: there is a tour script, which we have for tour guides to read. We don't expect them to learn it off by heart, but we expect them to be able to deliver the information, in their own way, clearly and understandably. So factually is also very very important [...]. We try to make sure that all our information is 100 per cent accurate. Sometimes tour guides do add a little bit of extra information, but they have usually checked it before they say it. John\_Parl\_15+

This experienced guide put a strong emphasis on the role that "100 per cent accurate" information has in the tour guide's training: guides have to know this information very well. By contrast, the way in which such information is then delivered is completely left to tour guides ("in their own way"). Fascinatingly, the same emphasis on information can be found in some considerations on the tour guides' training that Holloway expressed more than thirty years before my interviews:

Most guides perceive their prime role to be that of information-giver. This can be ascribed to the emphasis placed on the acquisition of knowledge during their training. Guides themselves perceive the acquisition of an extensive body of knowledge as a prerequisite to the establishment of professional status for their occupation. The accuracy of the information they impart to their passengers is also, in their view, a characteristic of the professional role. (Holloway 1981, 386)

The core of the tour guide's training seems then to have been quite consistent in the last thirty years, at least when comparing my findings with Holloway's ones. This core is

the acquisition of extensive and accurate information.<sup>46</sup> And the idea is reasonable that a tour guide ought to know the relevant information to be able to deliver a guided tour. However, knowing some information does not automatically mean knowing how to communicate that information: it is possible that a tour guide knows everything about the subject, but s/he is not capable of communicating this information to the visitors. Nevertheless, little attention seems to be devoted to the development of communication skills during the tour guide's training. The main source of communication skills for new tour guides during training appears to be the tour guide's peers, as the following quote suggests:

When you first start, you watch a few tours [...]. You get to come along and watch. And that's really beneficial, because you see how differently everyone does it. So I learnt right away that I could tell different stories and things. You've also been given a printout of some of the points you need to cover, and structures of the different tours. And then you're expected to kind of learn some of that stuff, and do your own research, [...] and then you undergo a tour assessment. Lydia\_C&S\_1

This quote presents how the information and the delivery of the information are treated in different ways during this guide's training. The information is directly provided ("You've also been given a printout of some of the points you need to cover"). The institution expects the guide to learn the information ("you're expected to kind of learn some of that stuff") and also to further explore the given information ("and do your own research"). By contrast, the way in which the information is delivered is left to the guide's initiative: the guide "watch[es] a few tours" and plausibly uses these tours as reference models for her own tour. The idea that peer training plays a central role in the tour guides' training of my sample is reinforced by another guide whose institution apparently provides "only peer support" Tim\_Lib\_10+. The idea that a new tour guide can learn the needed communication skills via peer training is problematic in its assumption that someone who has already done a tour is an expert in public speaking. As I have pointed out, while talking about the tour guides' backgrounds (see p. 81), this

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<sup>46</sup> Curators (or equivalent figures) are the ones that typically select this information.



is not necessarily the case. From this perspective, some of the guides that I interviewed appear to confirm the idea that their training could have had a stronger focus on communication techniques:

Maybe I expected to have more [training] but it ended up working really well, kind of being thrown into the deep end, and I don't know what else you can really do for the training. I mean you could always do workshops on more specific kinds of techniques. So not the content, but the way you deliver. That would be beneficial [...]. I think storytelling in particular would be a useful kind of workshop to do [...], and I think that something like that should be compulsory, especially for keeping people excited and entertained and interested. Lydia\_C&S\_1

In conclusion, the museum tour guide's training, as experienced by my interviewees, is characterised by a strong emphasis on gaining information. By contrast, the communication skills to deliver such information are marginal in the guide's training. This finding resonates also with Veverka's consideration about guides' training: "It has been my experience that most museum interpreters are well trained in the materials of the museum or historic site, but receive little or no training in 'visitor communication strategy'" (Veverka 1997, 80).<sup>47</sup>

## Status

In the last part of this section devoted to tour guides, I discuss how tour guides perceive themselves. Specifically, I try to explore what status tour guides perceive they have within their institutions and in the society at large. A first, significant quote that helps in this exploration of the tour guide's status is the following:

I must say here, at the moment, people delivering the tours are not the front-of-house staff. They are actually members of the education team [...]. And some

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<sup>47</sup> This finding is also supported by my personal experience as tour guide. For example, the training that I received before starting guiding in Genoa (see Introduction, p. 15) did not include any training in communication.

people that I work with are like ‘Ok, I can give a tour because I’m not a tour guide, I’m an educator. So I can give a tour because with this other title, I can speak from a different point of view, I can be an authority on this or an authority on that.’ I believe that as a tour guide you don’t have the right to be an authority on anything. [...] I don’t think that tour guides are respected as a profession – in New Zealand anyway. [...] And I’ve never applied for a role that was a tour guide position. Probably for a reason, actually, because in general: low money, no respect ... So the positions [that] are worth applying for often are education positions that may involve tours. Tim\_Lib\_10+

This quote suggests that the guide’s status is similarly low inside and outside a guide’s institution. Inside this interviewee’s institution, people do not even want to be considered a tour guide (“I can give a tour because I’m not a tour guide”). Outside the institution, at least in New Zealand, guiding is defined as not “respected as a profession.” The common trait for this situation apparently resides in the fact that tour guides “don’t have the right to be an authority on anything.” Paradoxically, this happens despite the fact that the tour guide’s training focuses on the acquisition of extensive knowledge (see the previous part of this section, p. 82). In other words, the aim of the tour guide’s training – as described by my interviewees – is to become an *authority* on the collection of the institution. However, in the light of the last quote, it is fair to say that that aim is not achieved, at least in Tim’s institution.

It is also possible that the tour guide’s status is linked with the amount of money that a tour guide earns. This aspect, already present in the previous quote (“low money”) is articulated further in this passage:

I suspect in many tour guide operations the turnover is quite high, staff turnover, because often the hours are anti-social as a lot of tour guiding involves weekend work [...]. I think it’s not objectively a well-paid industry, so a lot of people would do it for few years and then move on. It’s not very well paid. Dick\_Parl\_5+

As in contemporary Western societies the amount of money that one earns is possibly seen as an indicator of the value of the person, I think that suggesting a link between

the low guide's income and the low guide's social status is not illogical. In addition, and as pointed out by this interviewee, a consequence of the low money is high staff turnover. This situation does not appear to be exclusive to my Wellington-based sample, as "In many US science museums, floor-staff people tend to be young and in transition" (Bevan and Xanthoudaki 2008, 114).<sup>48</sup> A potential consequence of high turnover is that experience capital is constantly lost, potentially affecting also the quality of peer training and thus making the development of communication skills in tour guides even more difficult (see the previous part of this section, p. 82).

The tour guide status that emerges from my interviews can then be summarised as "in general: low money, no respect" Tim\_Lib\_10+. Tour guides are not happy with this situation. One of the interviewees vehemently presents her discontent with the lack of appreciation that specifically her institution shows towards guiding:

Guided tours are not funny little extras, but they actually represent why the museum is here. I mean, the museum can run without them, but essentially they are an echo or a reflection of the kind of reason for being of a museum. They are not just a kind of appendix [...]. But there is not a value attributed to it [...]: [tour guiding] isn't seen as something prized, it's seen as an afterthought. So I think tour guiding here, in this particular museum, is seen as almost like a gift to the visitors, and there has not yet been a formal sort of appreciation of its value to the museum. Sarah\_C&S\_1

This lack of institutional appreciation, however, does not necessary drive the guides to feel unimportant. The tour guides that took part in my study were generally well aware of their visibility, and conscious of the consequence of such visibility:

We are the face that people get when they come in, so we gotta be really onto it. Because we are extremely visible, and so very important for all the brand and just the feel of the museum. Lydia\_C&S\_1

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<sup>48</sup> The presence among my interviewees of guides with many years of experience is linked with the specific working conditions that Parliament provides its employees. While tour guides are typically hired as seasonal workers, the tour guides that work for the Parliament normally have permanent positions.

## 3.2 Museum guided tours

In this second section, I discuss the museum guided tour. The general question that I attempt to answer here is: “How does a museum guided tour work?”

This section focuses on three specific aspects of the museum guided tour. First, the communication strategies that tour guides use during a guided tour. I discuss this topic comparing the tour guides’ communication strategies with acting.<sup>49</sup> The second aspect of a guided tour that I explore is the definition of a successful guided tour. I approach this topic by trying to find out if a successful guided tour can be defined through the presence of some specific elements in the guiding experience. The third, and last, aspect that I examine is whether (and eventually how) the dimensions of the group of visitors influences the structure of the guided tour.

My overall aim in this section is to identify elements in guiding that I can adopt in developing my own performance.

### Communication strategies

In the previous section, I presented how the tour guides’ training does not specifically focus on communication strategies (see p. 82). However, this does not mean that tour guides do not use (or develop) communication strategies while delivering guided tours. In this part of this section, I examine the nature of these communication strategies.

In the absence of specific training, the tour guides that I interviewed apparently adopt two ways to develop their own communication strategies: either they directly experiment while guiding, or they “recycle” communication strategies from previous life experiences. The following quotes provide examples of the first and second case respectively:

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<sup>49</sup> I use as a reference point in this comparison mainly the text-based acting that happens on a stage and in front of an audience. This type of acting that can be found in most mainstream theatre productions in the Western world, for example West End (London) and Broadway (New York) productions.

Other techniques about tour guiding, which I've learnt over the years – myself I've learnt – is that if people talk when you're talking to them, what I do I stop talking. And if everyone in the group starts looking at the other persons talking, they stop [...]. The other thing, when you are using your hands, people will always follow you. And if I look at something over there, everyone else will look as well, [...] so to get people's attention, I try to capture their eyes and ears at the same time. John\_Parl\_15+

I used to teach at the polytechnic, and one of the things that I've learnt from that is that your students have only a three-minute attention span. So in a tour I say something very factual, and then I light that up [...]. So it's a flow of factual, really boring information, then put in a context that can be slightly entertaining or amusing [...] in order to keep people's attention during the tour. If you did a straight tour, pure facts, it would be so-o-o boring. George\_Parl\_10+

Some of the strategies that the first guide presents are the same strategies that actors typically use on stage: “when you are using your hands, people will always follow you” and “if I look at something over there, everyone else will look as well.” From this point of view, the idea that a tour guide is a performer (see chapter 2, p. 43) finds confirmation in this guide's words.

However, the second guide highlights an aspect of guiding that has less correspondence in acting. This second guide faces a specific communication problem: his script cannot be delivered as it is, because the guide thinks that the script is “so-o-o boring.” The solution that this guide adopts is to divide the script in small bits and then add “slightly entertaining or amusing” parts between information bits. Even if it is not necessarily uncommon for actors to face inadequate scripts, the idea that an actor could autonomously decide to stop delivering the script, make a few unrelated jokes, and then go back to the script is unlikely. This second guide, then, is showing a degree of freedom from the script that is possibly uncommon in contemporary actors. It is interesting to note that this second guide adopts such a specific communication strategy because he is trying “to keep people's attention during the tour,” thus showing awareness of the potential boringness of the tour.

The awareness that a guided tour could be a boring experience is a shared concern among the tour guides of my cohort:

I try to use few visual aids, [...] because some people ... it's an hour when you are talking solidly: it's a long time and some people get bored with that, so by showing them something [...] I can make it more interesting for some people [...]. It's also challenging to keep it fresh, because you are doing the same thing. Cause you are doing much of the same tour, three or four times a day.  
Dick\_Parl\_5+

This quote is interesting for two reasons. First, it presents how this guide will “try to use few visual aids” to amend the potential boringness of the tour. At its core, this communication strategy has the same structure as the previous one (George\_Parl\_10+): the flow of information is divided into smaller bits and something different is interpolated between them. The second reason that this quote is interesting is that it clearly presents an issue that tour guides face when they have to repeat “the same tour, three or four times a day”: they need to find a way “to keep [the tour] fresh.” The problem of keeping the repeated delivery of a performance fresh is possibly another shared issue with acting. One of the interviewees has solved this issue in a specific way:

For me, I have always thought that the information I'm giving it's the first time I'm ever giving it. If you think that, it doesn't appear repetitive. And I don't necessarily deliver the same thing in the same way. I alter them, for all sorts of reasons. And you might hear someone saying something [like] ‘oh I wonder what that is’ and you can go straight in and say ‘oh look, that's so and so’.  
John\_Parl\_15+

What I find inspiring is that the guide, to keep his delivery fresh, takes advantage of the visitors' curiosity and transforms the tours – that have been defined as “pre-planned didactic presentations” (Camhi 2008, 276) – in an improvised dialogue.

The idea that the visitors can play an active role during a guided tour is further explored in the following quote:

One way I have found to give an entertaining experience while being effectual, is actually to ask questions to the group [...]. So by asking a question to the group [...] you are asking their opinions, and in a way you are facilitating

dialogue – that can be very entertaining and you can pick up on it because the people there are engaged. And so all sorts of wonderful things will spring out, as oppose to me splatting out dry cold facts. Tim\_Lib\_10+

While the previous guide (John\_Parl\_15+) seems to use visitors' curiosity to better link the tour information with the visitors' interests, this guide (Tim\_Lib\_10+) suggests the idea that visitors can directly provide some of the contents of the tour ("all sorts of wonderful things will spring out"). Nevertheless, both these tour guides solve the problem of keeping their delivery fresh through active interaction with visitors. A consequence of this strategy is that the delivery is not just fresh, but also intimately correlated with the actual visitors that are taking the tour. This strategy, however, is once again outside the general practice of acting: actors do not typically ask their audience what the audience wants to see.

In conclusion, it is possible to suggest that tour guides and actors face common issues in their professions. This idea resonates with Holloway's finding that "Most guides also recognize that success in their job calls for a measure of acting ability" (Holloway 1981, 389). This means that some of the communication strategies that tour guides use are related to acting. However, it is also true that some of the communication strategies adopted by tour guides are quite distinct from what actors generally do, and the clearest point of difference is the relationship with the tour script. Unlike most contemporary actors, at least some of the tour guides of my cohort do not seem to be bound to their scripts. As a matter of fact, these tour guides, in order to engage their audience, actively change their scripts. This change can take different forms, from the insertion of "amusing" passages in the script, to the transformation of the monologic tour script into a dialogue with the visitors. I think that this last idea (a guided tour can be a dialogue) is very inspiring and a possible reference point in the creation of my performance.

### **A successful tour**

In this part, I discuss how the tour guides of my cohort define a successful guided tour. In particular, I try to understand whether it is possible to identify specific elements that, when present, characterise a successful guided tour.

According to Holloway: “In the guides’ view, the successful excursion is one in which social interaction is evident, where passengers talk among themselves, smile, express interest in and appreciation of the commentaries, and ask questions” (Holloway 1981, 388). Holloway’s analysis refers to coach trips. However, there are common points between his analysis and the following quotes from my interviewees:

I think you have a feeling yourself, whether you’ve done a good job or not [...]. I think you can tell by the reaction you get from the group. And one clear way is if people clap at the end of the tour [...]. Or [if] people don’t wanna leave you: they come back and they ask you questions. They want to be involved. John\_Parl\_15+

If you get questions then you know people are listening and they are interested. The worst thing is to get no questions, because then you don’t know if they are listening to you at all. I like to get feedback, and that comes mostly in the form of questions. Dick\_Parl\_5+

I guess when I come away feeling quite disappointed with how a tour has gone it’s because they don’t ask any questions. They don’t show much expression on their faces, whether good or bad. They are not chatty. Lydia\_C&S\_1

The element all these quotes have in common is that, in a successful tour, visitors ask questions. Notably, these quotes come from guides with different levels of experience, thus further highlighting how visitors’ questions are central in the evaluation of a tour. Visitors’ questions show that visitors “are listening and they are interested.” Moreover, visitors’ questions provide tour guides with feedback, because through questions guides can evaluate whether they have successfully communicated to visitors (“I like to get feedback, and that comes mostly in the form of questions”). From this perspective, it seems paradoxical that visitors’ questions, the key element in a successful tour, receive no attention during a tour guide’s training: the training mainly focuses on what the tour guide should say (see p. 82), thus potentially implying that visitors have no active role in the tour. This idea finds confirmation in Best’s comment that: “Museum training



generally focuses on the content of guides' talk and interpretation, whilst audiences are largely neglected" (Best 2012, 47).<sup>50</sup>

A last point of discussion on 'successful tours' revolves around the delivery of a tour to an audience that, for different reasons, might be defined as 'difficult':

It's always challenging to capture someone who may not even have [taken part in] the tour by choice. And the venue environment may not be their first choice of something that is entertaining to them [...]. But being able to find something that connects them, engages them ... and when they thank you at the end you know it is genuine, and you have probably exceeded the expectations, then that is quite a thrill. Tim\_Lib\_10+

This quote resonates well with another of Holloway's considerations: "Guides, like theatrical actors, experience a "high" as a result of a successful performance, and the winning over of a difficult audience is seen as a personal triumph boosting the self-image" (Holloway 1981, 389). Thus, another element of a successful tour (in addition to the visitors' questions) that this last quote (Tim\_Lib\_10+) highlights is the personal satisfaction of the guide. This last element, however, is complicated because it directly links the success of an experience to the person that contributes in creating that experience. In other words, the guide is like an actor who assesses his own performance. While this process of evaluation is possible, my personal experience as a performer and director suggests that what an actor feels about his performance does not necessarily always correspond with what the audience feel about the actor's performance. In particular, I would suggest that inexperienced actors are the ones more prone to misjudge their performances. Given the high staff turnover that affects the guiding

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<sup>50</sup> I have found only one academic publication that presents the evaluation of a live science interpretative programme (Parsons 1997). This publication focuses on unscripted live interpretations delivered at the Monterey Bay Aquarium, thus not exactly a guided tour (even if the two formats have elements in common). The specificity of the subject of the publication makes complex a clear comparison between the publication and my sample. However, it is important to note that in evaluating the interpretative programme, visitors' responses to the interpretative programme were not considered, thus possibly confirming the idea that, from the point of view of the institution, visitors are not relevant when talking about guided tours: neither during the guides' training nor when evaluating guided tours.

profession (see the previous section, p. 86), it is then possible that this element of personal satisfaction of the guide is theoretically valid, but practically unconvincing as an element to determine the success of a guided tour. In conclusion, what my interviewees highlight is that for them the key element to assess the success of a guided tour is the presence of visitors' questions.

### **Group dimensions**

In this last part of this section, I explore whether a guided tour changes according to the number of visitors or whether a tour is always delivered in the same way. In the context of my study, I consider a 'big group' to be a group with more than ten visitors, while a 'small group' is a group with fewer than ten visitors. A first quote to explore this topic is the following:

With a [big] group, we are looking at group dynamics. How [the visitors] are interacting with each other, if they know each other, if they come to the venue as one group, or whether everyone is assembling for the tour. So always looking at the dynamics there. Age, gender, and thinking in a broad sense about how [...] the story or message can reach a wide audience. Whereas with the small group, I can find out their stories and almost suit [the tour] to them. With a large group, I am looking at how I can appeal to the widest number of people in the group, [and] often the expressions are generalised. Tim\_Lib\_10+

This quote highlights how the tour guide changes his delivery of the tour according to the dimensions of the group. With a big group "the expressions are generalised," while with a small group the guide "can find out their stories and almost suit [the tour] to them." The difference, then, between a tour with a big group of visitors versus a tour with a small group of visitors can be defined as 'general versus personal'. This definition finds confirmation in the words of another guide of my cohort:

If you have a big group of course it could be quite challenging. Just keeping the group together, make sure people don't wonder off ... [...]. With a big group you tend to be more structured, because first of all you have to keep control of

the group, and it takes longer to move the group, and with a big group you tend to talk more formally. With a small group it is more conversational [...]. With a big group it is more a performance, and with a small group you can be a little bit more personal and more like a conversation. Dick\_Parl\_5+

A big group makes the guided tour a slower, more structured experience (“it takes longer to move the group [...] with a big group you tend to be more structured”). By contrast, a small group is defined as an experience in which the guide “can be a little bit more personal.” Also in this quote, then, the theme ‘general versus personal’ is present. Specifically, this quote describes a tour with a small group as similar to a conversation. This metaphor is apparently appropriate, as it is used also by another guide:

I like [a small group] if they are quite relaxed. I think it has the potential to be awkward with the smaller numbers. But if they are relaxed, it runs really smoothly because it is more conversational: it’s not just me kind of ranting, [it] is more conversation based, so I do enjoy that. Lydia\_C&S\_1

It is important to note that if a tour with a small group of visitors is like a conversation, it is reasonable to suppose that a tour with a small group has more chances of having visitors ask questions. Unlike a monologue, a conversation is made up of a multiplicity of voices and thus a conversation offers opportunities for the visitors to chime in and to ask questions. This point is significant, because if – in the context of my interviews – what defines the success of a guided tour is the visitors’ questions, visitors should have as many occasions as possible to ask them (see my previous discussion on successful tours, p. 91).

In conclusion, my interviewees highlight how the dimensions of the visitors’ group seem to affect the delivery of the tour in quite a specific way: if the group is big, the guide tries to “appeal to the widest number of people” thus providing the visitors with more generalised expressions. By contrast, if the group is small, the guide “can be a little bit more personal” and the guided tour becomes closer to a conversation. Importantly, it is reasonable to assume that a tour with a small group of visitors has more chances of being a successful tour. I should then consider, when planning my

performance, that a small group of spectators potentially provides a more favourable setting than a big group of spectators when aiming to create a personalised event, and also potentially results in a more successful performance if the measure of success is spectators' questions.

### **3.3 The relationship between museum tour guides and visitors**

As I have described earlier in chapter 2, guided tours are typically defined in the academic literature as “pre-planned didactic presentations, delivered in more or less the same way each time they are given” (Camhi 2008, 276). However, what seems to emerge so far from my interviews is that guided tours are interactive events that some of the tour guides of my sample are somehow able to change and adapt according to who the visitors are.

In this last section, then, my aim is to explore whether it is possible to describe guiding as an event in which interactions are central. To achieve this aim, I first explore the tour guide’s role, further examining the relation between information and communication in a guided tour. Then, in the second part of this section, I discuss how tour guides of my cohort describe the visitors’ role in a guided tour, presenting two different concepts of the visitors’ role: passive listeners and active participants. Finally, in the third part of this section, I present interactions between tour guides and visitors, exploring the degree to which a tour can be adapted to match the visitors’ interests.

#### **Museum tour guides’ role**

In this first part, I examine what role the tour guide has in a guided tour. I first start presenting how the guide’s role is described in academic literature, and then move to examine my interviewees’ answers to explore different interpretations of the same role.

On the topic of the guide’s role, Cohen reports how: “The dissemination of correct and precise information is by many considered to be the kernel of the guide’s role” (Cohen 1985, 15). Holloway confirms this idea: “Most guides perceive their prime role to be that of information-giver,” adding later that: “Guides are less likely to see their role as entertainer. This aspect of the role is downgraded, perhaps in part because guides recognize that success depends upon individual personalities, which are less likely to be developed through training” (Holloway 1981, 390). However, two of my interviewees suggest a different interpretation of their roles. An interpretation in which the ideas of performance and entertainment are central:

Each tour is a theatre performance. You are the actor, you are presenting this great stage to the public. And so as an actor ‘the show must go on’, no matter how you feel, no matter what was happening five minutes ago. You put all in the back and you go. So it is theatre [...]. I do a lot of faces that I wouldn’t do normally. George\_Parl\_10+

[My aim is] for the people to leave having enjoyed the tour. And if they enjoyed learning something, then that’s even better. Because I don’t think anyone came in for educational purposes [...], they came in to have an enjoyable one hour and look at something that is important. Ted\_Parl\_15+

The first quote resonates with all the elements of guiding that are related to acting and that I have highlighted so far in this chapter: from the tour guides’ background to some of the tour guides’ communication strategies. However, this quote is particularly significant because it indicates that this guide is fully aware of the similarities between guiding and acting (“Each tour is a theatre performance”): these similarities, then, are not just an academic argument based on analogies, but a real phenomenon described by a guide. Also, this awareness is linked with my definition of performance, thus further supporting the interpretation that a tour guide is a performer. Moreover, this phenomenon (guided tour = performance) is not peripheral in the guiding experience: it provides a metaphor that encompasses the tour guide, the cultural institution and the visitors (“You are the actor [the tour guide], you are presenting this great stage [the cultural institution] to the public [the visitors]”).<sup>51</sup>

The idea that performing is the key element of guiding is reinforced by the second quote. According to the second quote, the main point of guiding is not “the dissemination of correct and precise information” but “for the people to leave having enjoyed the tour. And if they enjoyed learning something, then that’s even better.” In other words, this guide’s priorities are: first entertainment, then information.<sup>52</sup>

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<sup>51</sup> Considering performance as ‘theatre/performance’, see p. 44.

<sup>52</sup> The idea that guiding is not necessarily focused on the dissemination of information is not new. Davidson and Black, in their study on cave guiding, report that: “what distinguishes the findings of the present study from others is that cave guides placed a considerable importance on delivering an emotional

Nevertheless, not every guide in my cohort shares the opinion that guiding is primarily about entertainment. For example, the following interviewee seems to agree with Cohen and Holloway's interpretation of the tour guide as information-giver:

I think the main aim would be for them to learn something new [...]. So that would be probably number one, but followed closely by the entertainment aspect. And having them at ease, having a laugh I think that's very important, So that's a close second, but I think dispersing the information is first and foremost. Lydia\_C&S\_1

Importantly, the two guides that support the idea of guiding as 'entertainment' are both guides with many years of experience, while the guide that support the idea of guiding as dissemination of information is a part-time guide with roughly one year of experience. I think it would be stimulating to discover if, after another fifteen years of guiding, she would agree with her senior colleague's statement: "I don't think anyone came in for educational purposes."

What emerges from this analysis is then a fractured landscape, in which competing interpretations coexist. As a matter of fact, the tension between the tour guide as information-giver and the tour guide as entertainer is possibly in itself a definition of the tour guide's role: the two aspects are not necessary mutually exclusive.

### **Visitors' role**

After examining the tour guide's role, this part explores what the visitors' role is during a guided tour. The interviewees' opinions on this topic are related to how the guides define their own role. Hence, it is not surprising that also the visitors' role tends to be defined by tour guides using two different interpretations: visitors as passive listeners

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experience, rather than an intellectual or learning experience, and at the very least aimed to achieve an aesthetic knowing. The guides did not perceive providing an emotional experience as a tool or method of enhancing the tour, but as their core agenda; the guides wanted the experience to be a "feeling" experience" (P. Davidson and Black 2007, 36).

(if the guide is defined as an information-giver), or visitors as active and free participants (if the guide is defined as an entertainer).

I present the first interpretation of the visitors' role (visitors as passive listeners) through the following quotes:

To listen: you like to think that they are there to learn [...]. So I guess their role is to pay attention, to concentrate. Not just to wander around. Dick\_Parl\_5+

The visitor's role basically is to be a person who is going to be shown the building, you provide information to them. A person that may come here with no knowledge about the place. Rosy\_Parl\_5+

The first quote presents the logical consequence of interpreting the tour guide as information giver: if the guide is the information giver, the visitors are the information receivers ("To listen [...] their role is to pay attention, to concentrate"). As information receivers, visitors do not have an active role in the guided tour. This interpretation of the visitors as passive entities is further presented in the second quote, in which visitors simply receive information ("provide information to them").<sup>53</sup>

As I have anticipated, however, the idea that visitors are passive listeners is not the only way in which guides interpret the visitors' role. The following quotes provide two examples of an alternative interpretation:

For me I think their role is to really take an active role, and talk back to me, and ask questions and show that they are enjoying it or not enjoying it. I think that's what their role is: to kind of be very alive and not afraid to pipe up. That's

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<sup>53</sup> It is also interesting to note that these two quotes share the idea that the visitors are ignorant: the visitors "are there to learn" and they "may come here with no knowledge about the place." In this assumption of the visitors as not-knowledgeable, these quotes resonate with the 'deficit model' of the communication of science (see p. 57). The idea behind the 'deficit model' is that the public is an empty vessel that is waiting to be filled by the knowledgeable. In the context of a guided tour, the knowledgeable are, according to these interviewees, the guides.



interesting to think about, I've never thought about that that much.  
Lydia\_C&S\_1

I actually feel that they are free to – apart from basic courtesy, like not throwing chewing gum at you or something – they are free to come and go and be as engaged as they wish to be. I don't feel that they have a formal obligation. It's not school, so they can do whatever they want. Sarah\_C&S\_1

The first quote presents the visitors as an active part of a guided tour: the visitors' role according to this guide is to “really take an active role, and talk back to me, and ask questions.” The second quote reinforces this interpretation, even if it describes a more complex vision of the visitors' role: the visitors are “free to come and go and be as engaged as they wish to be.” From this point of view, the visitors are active because they have agency: they can choose to do what they want (as opposed to having “to listen”).

Furthermore, the second quote is particularly interesting because it suggests a sort of opposition of the museum setting and the school setting: “It's not school, so they can do whatever they want.” The idea that a museum is not a school is fertile, because it implies that visitors are not students and so visitors do not actually have “to pay attention, to concentrate.” Museum visitors could then be defined as a “noncaptive audience” (Ham 2013, 11):<sup>54</sup> visitors do not have to take a guided tour, they might choose so, but it is useful to remember that most of the adult visitors visit museums as “one choice of leisure activity among many” (G. Black 2012, 39). It is then possible that visitors do not go to museums “to learn” but just to have a good time. From this perspective, it might be useful to consider whether visitors would prefer having an active or a passive role in a guided tour. If – at least from some of my interviewees' perspectives – the presence of visitors' questions is the hallmark of a successful tour, I do not see how considering visitors as passive listeners would help in achieving a successful tour.

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<sup>54</sup> See also my discussion of Ham's ideas in chapter 2, p. 40.

In conclusion, there are two different interpretations of the visitors' role during a guided tour among my interviewees. In the first interpretation, the visitors have a passive role. In the second interpretation, the visitors have an active role. This second interpretation is possibly more useful when attempting to achieve a successful tour, as active visitors are more likely to ask questions. Furthermore, this second interpretation is potentially more relevant as a reference point in the creation of my performance, as it provides me with a way of thinking about my spectators as active elements of the performance. This is important because the critical reflection on science – one of the key aspects of my performance (see p. 59) – can be potentially achieved more easily with spectators who are active, as to have a critical attitude means to actively be thinking about a specific subject.

## **Interactions**

If the tour guide considers the visitors to be a passive element of the guided tour, the interaction between the tour guide and the visitors is one-directional only: the tour guide speaks, the visitors listen. However, if the tour guide considers the visitors to be an active element in the tour, the interaction between guide and visitors can become a two-way interaction, and the guide could decide to modify and adapt the tour to better fit the visitors' characteristics and tastes.

In the following part, I examine two-way interactions between guide and visitors as presented by my interviewees, while reflecting on the limits that this practice could encounter. A first example of how a guide from my cohort can adapt the tour for the visitors is the following:

We ask always where people come from [...], and sometimes you can match that to the galleria where we have ribbons from different countries. And so you try to remember and match that ribbon with that person, and they really appreciate that. The other technique I use with people speaking other languages [is that] I've learnt about 12 different greetings and thank-yous [...] and people really appreciate that. John\_Parl\_15+

The interactions presented in this quote do not change the structure of the tour. The guide makes the tour more personal matching where the visitors come from with relatively small gestures embedded in the structure of the tour. Possibly unsurprisingly, the visitors “really appreciate that.” These types of interactions are planned in advance and provide some personalised space for the visitors. However, apparently more substantial and improvised interactions are also possible:

I think is important to have that flexibility, depending on who your audience is. So, to be a good tour guide you have got to be good at reading people and interacting with them, because the worst thing is just having a tour guide who is lecturing at you and not having that interaction [...]. So I think it's quite important to tell [...] the Crown Jewels because lot of people want to see the Crown Jewels. We only got them in recently on display [...] so lots of people would come specifically to see them, so that one wasn't one that I picked because I thought it was fascinating. I thought the audience often want to see them, and again sometimes I pick them quite last minute, depending on who the audience is. Lydia\_C&S\_1

This guide suggests the idea that the actual structure of the tour could be adapted to match the visitors' interests: different exhibits can be presented to different groups.

However, this idea that a tour could be adapted ‘on the spot’ (“I pick them quite last minute”) could potentially conflict with the leading role that a guide is supposed to assume during a tour:

You always have to maintain some sort of control of the group. And the group want you to do that, because they want to feel safe: that you know, that you are delivering appropriate content that you know because you've done it before [...]. The audience needs to be able to trust the tour guide, the audience needs to feel ‘ah this is great, I can go along for the ride, because everything is sorted’. Tim\_Lib\_10+

According to this guide, the interactions (and thus the degree to which a guided tour can be improvised) should not stretch so far that the visitors feel unsafe. Building on these quotes, then, it appears reasonable to suggest that the degree of interaction

between the tour guide and the visitors should strive to reach a balance between a situation in which the visitors' interests are met, and a situation in which the guide – to follow the visitors' inclinations – ends up losing control of the group. Finally, this balance between the visitors' interests and the guided tour structure is another reference point for my performance, in the idea that the performance needs to have a structure that – while possibly following the spectators' wishes (see on this point my discussion on entertainment, p. 50) – still provides the spectators with a “safe” environment.

## ***Conclusion***

This chapter is an exploratory study of museum tour guiding, as described by eight museum tour guides. Their opinions were compared and contrasted with the relevant academic literature.

There are two most important findings of this chapter. The first concerns the role of the museum tour guide, while the second relates to the definition of the guided tour.

The first finding is that a museum tour guide can be defined as an entertainer. In other words, at least according to some of my interviewees, the tour guide's aim is not to impart information, but to entertain the visitors. This definition contrasts with the definition of tour guide as information giver that can be typically found in academic literature (Cohen 1985; Holloway 1981). As I have already pointed out, these definitions are not mutually exclusive, but can represent together a definition of the tour guide.

The second finding is that a guided tour is not a fixed monologue but an interactive dialogue. This definition of the guided tour contradicts the idea that guided tours are "pre-planned didactic presentations, delivered in more or less the same way each time they are given" (Camhi 2008, 276). This definition of the guided tour is intimately related to the idea that the first aim of guiding is entertaining: if the first aim of guiding is delivering information, the guided tour collapses in a monologue.<sup>55</sup>

Moreover, something noteworthy emerges when considering these two findings in relation to the tour guides' training. The tour guides' training is mainly focused on information: the acquisition of information and the accurate delivery of information. Nevertheless, some guides seem to practice guiding with a stronger emphasis on the relation with the visitors, changing and adapting the information. This fact resonates with Michel de Certeau's work on everyday practices (de Certeau 2005). Particularly, de Certeau's distinction between 'strategies' and 'tactics' is useful here to understand the difference between the prescriptions of the institutions (strategies), and the practices of people that work inside the institutions (tactics) (de Certeau 2005, 15). In other

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<sup>55</sup> On this point, see also my discussion in chapter 2 of Best's ideas, p. 33.

words, de Certeau suggests that there is a distance between what an institution prescribes to its workers, and what these workers actually do on a daily basis. From this perspective, there is a distance between what some of my interviewees do, and what their institutions probably think they should do: the distance between the guided tour planned by the institution and based on information, and the guided tour performed everyday by the guides and based on interactions. This second, practised and ‘tactical’ way of performing a tour seems a relevant hallmark for my own way of performing my tour.

From this perspective, this chapter has also provided me with considerations and ideas that are important in the creation and development of my performance. The main consideration concerns the nature of a guided tour, which is significantly different from a traditional piece of theatre. Before doing the field research that lies behind this chapter, I considered – possibly influenced by the academic literature – that a guided tour was basically a monologue.<sup>56</sup> As discussed, however, my research suggests that a successful guided tour is potentially closer to a dialogue. A dialogue characterised by a high degree of flexibility in order to accommodate the visitors’ interests. This means that my performance, as an event inspired by guided tours, should resemble more a dialogue than a monologue from a structural point of view.

Furthermore, as the hallmark of a successful guided tour is the presence of visitors’ questions, in my performance I need to consider how to facilitate as many occasions as possible for the visitors to ask questions – something, once again, remote from a traditional piece of theatre.

It is important to remember that all these findings and observations are based on a very atypical selection of tour guides. As I have highlighted in this chapter, guiding as a profession is characterised by a high turnover (see p. 86). Nevertheless, guides with more than ten years of experience constitute more than half of my cohort (see the introduction, p. 78). It is then plausible that I had access to a very skilled and successful group of guides with a real passion for their profession, and also the time to develop

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<sup>56</sup> As I have discussed in chapter 2, the authors that suggest that the guided tour is an interactive event do not question the monologic structure of the guided tour, but simply highlight the fact that the visitors “are affected emotionally, cognitively and physically by the action they witness” (White 2013, 3). See p. 45.

and improve their communication skills. From this perspective, the key finding of this part of my research that guiding is (also) about entertainment (and not only about the dissemination of information) is reasonably rooted in the exceptional amount of experience that most of my cohort has. The following quote well presents this point:

I've got slower and slower: [...] after about two or three years I realised I was going too fast, and I've been giving less and less information every year. And people have enjoyed [the tour] more and more. Ted\_Parl\_15+

The idea that a guided tour is more successful when it provides less information is not simple to grasp in a profession whose training is based on the acquisition of extensive knowledge. Only a person that had the opportunity (and the capacity) to proficiently analyse his work repetition after repetition could have reached such a conclusion.





## 4. Science Museum in a Pizza Box: description and analysis of the performance

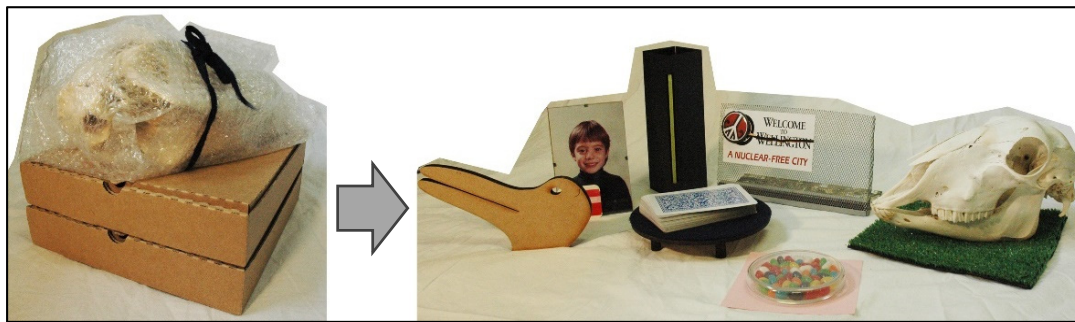
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## ***Introduction***

In this chapter, I present and analyse my performance: *Science Museum in a Pizza Box*. This performance is a dialogue-based activity during which I exhibit science-related objects and stories through theatre techniques. My aim is to entertain the participants of the performance through a critical approach to science and scientists. This performance is inspired by my interviews with tour guides that I have presented in the previous chapter.

Key elements of the performance are seven exhibits that are stored inside two pizza boxes and travel to the location that the participants prefer (see Figure 3).<sup>57</sup>



*Figure 3: The seven exhibits packed (left) and unpacked (right)*

At the beginning of the performance, I take the exhibits out of the boxes and I place them on a table, with the participants sitting around the table (see Figure 4).

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<sup>57</sup> The sheep-skull travels on top of the pizza boxes, wrapped in bubble-paper. The sheep-skull is too big to fit inside a pizza box.



*Figure 4: The exhibits on a table ready for the performance (left, Museum of Wellington City and Sea; right, Italian National Museum of Science and Technology Leonardo Da Vinci)*

I then introduce the performance, explaining the ground rules (how the performance works and what happens during the performance).

The performance begins with a word-association game based on the words ‘science’ and ‘scientists’. After that, the participants choose one of the exhibits that becomes the starting point of a dialogue on science based on the participants’ interests, and thus improvised. Once the dialogue is over, the participants choose (and then have a dialogue on) another exhibit. The participants choose a total of four exhibits (out of seven). These four dialogues on the exhibits involve everyone. During these dialogues, I contribute by presenting the participants with stories, anecdotes and facts related to science and scientists. I present these materials through different theatre techniques (puppet theatre, magic, songs, storytelling, etc.). At the end of the performance, the participants play again the word-association game based on the words ‘science’ and ‘scientists’. A reflexive dialogue on the performance concludes the performance (see Figure 5). The performance lasts approximately an hour. While some of the exhibits of the performance changed during its experimentation, the structure that I have just presented was consistently the same since the beginning (see Figure 5).

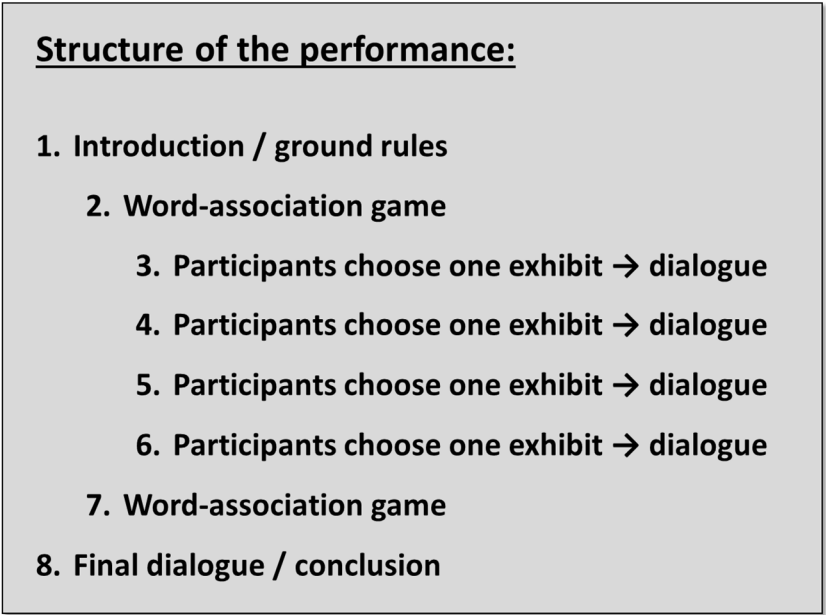


Figure 5: The structure of the performance

The analysis that I present in this chapter is based on the rehearsal process (seven months, from March 2013 until September 2013), and 52 performances (all the performances that I did between 19 September 2013 and 30 December 2014; see Annex 1 for a full list of the performances, p. 226). A total of 260 people took part in these performances. The number of spectators for each performance varied from one to 13. In the following table, I present the performances grouped according to the number of participants (see Table 4).

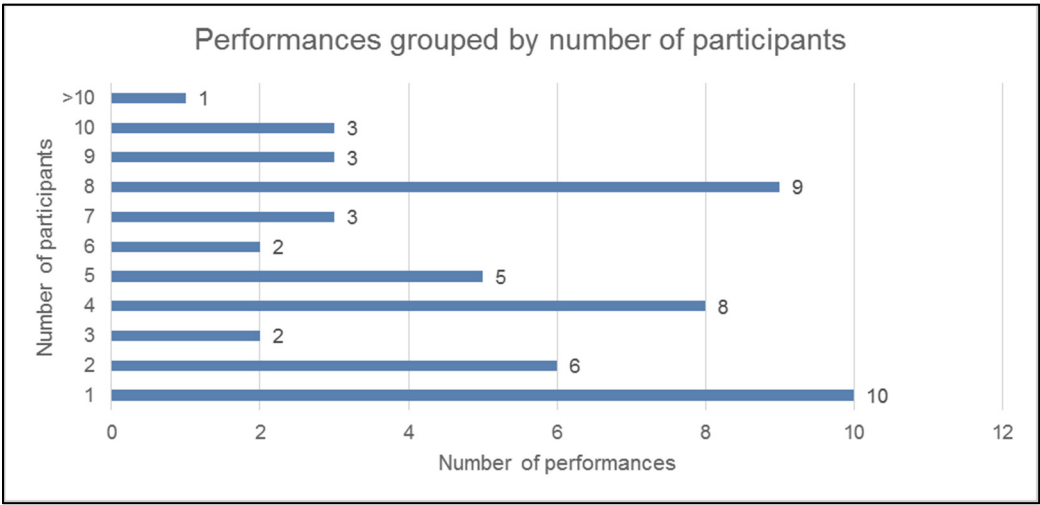


Table 4: Performances grouped by number of participants (52 performances, 260 participants)

The performances took place in different locations, allowing me to experiment with different settings and different audiences. In the following table, I present the performances grouped according to the location and the type of audience (see Table 5).<sup>58</sup>

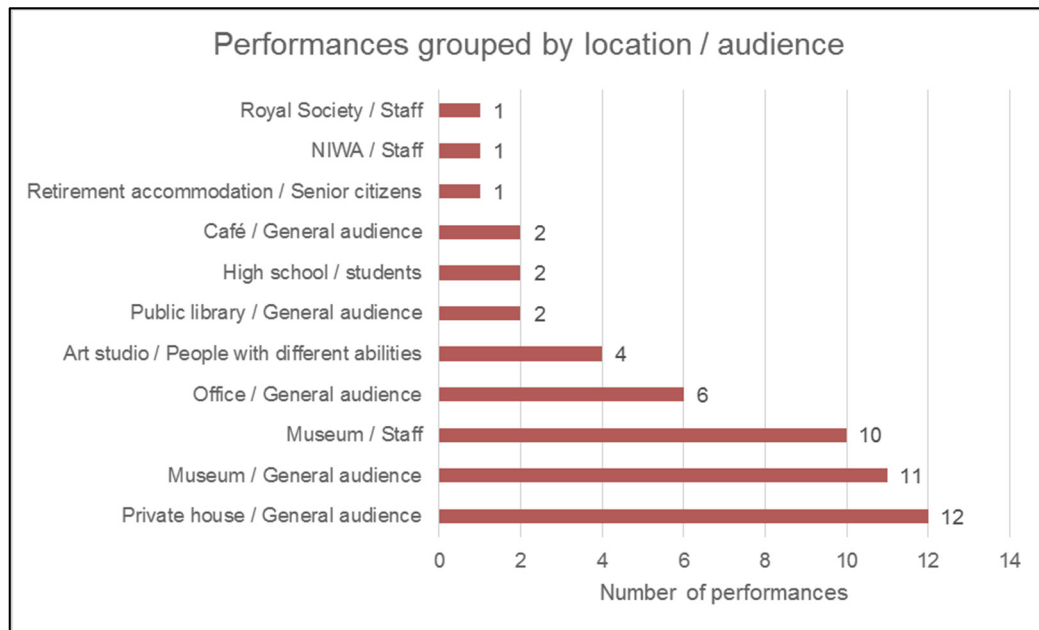


Table 5: Performances grouped by location / audience (52 performances)

Sources of data for this chapter are my journals, the audio notes that I took immediately after some performances, the four different versions of the canovaccio that contain most of the stories and data that I use when performing,<sup>59</sup> and spontaneous participant's feedback (comments on Facebook, sms). I used these sources to retrace my research and to explore how the performance (and my way of performing) had changed during its experimentation.

<sup>58</sup> NIWA is the National Institute of Water and Atmospheric Research. It is a crown research institute established in 1992.

<sup>59</sup> A canovaccio is a written text that lists some of the situations that could arise during a piece of *Commedia dell'Arte*, usually providing a schematic description of the characters' actions. Inspired by this model, I have no written word-by-word text of my performance. I have only a text (technically a PowerPoint file) that lists in a random order the exhibits of the performance. For each exhibit, there are few pictures and few keywords that help me remember the main passages of a story and their possible variations.

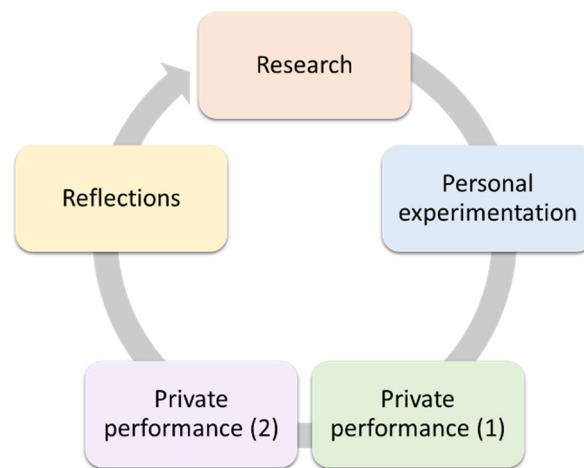
In the first section of this chapter, I discuss the rehearsal process, highlighting its link with action research. In addition, I present the material and guiding principles that I used to create the performance.

In the second section, I present the experimentation of the performance. I divide the experimentation in three phases. The first two phases are defined by a different degree of control that I exercised on the performance: while in the first phase I was partially controlling the participants' experiences, in the second phase I tried to let the participants be as free as it was possible. The third phase focuses on the performance carried out overseas.

In the third and last section, I reflect on the participants in the performance, exploring how the dimensions of the participants' group influenced the performance. Finally, I reflect whether my attempts to reach audiences usually underrepresented among museum visitors succeeded.

## 4.1 Rehearsal process

The rehearsal process lasted for seven months, from March 2013 until September 2013. During the rehearsal, I created the seven exhibits that made up a first version of my performance. I used action research as the strategy for my rehearsal process (see chapter 2, p. 69). Hence, my rehearsal process was a series of circular processes in which five elements were involved: research, personal experimentation, private performance (1), private performance (2), and reflections. During each circular process, I aimed to create one exhibit. Each circular process was the starting point for the next one (see Figure 6).



*Figure 6: The rehearsal cycle*

The element ‘research’ describes the phases of the circular process during which I was looking for objects and stories that constitute respectively the material and immaterial elements of the seven exhibits of the performance. Each exhibit centred on an object that was a potential starting point for a story. In some cases, I first found the object and then elaborated a story. In other cases, I found an interesting story and after that I looked for the right object around which to create the exhibit. Objects and stories existed as a given pair: object/story.

Once I found an interesting object/story, I went through a phase of ‘personal experimentation’. In this phase, I tried different theatrical ways to present the object/story. This meant, on the one hand, to find a way to display the object and thus to create an exhibit. On the other hand, this meant to choose a theatrical approach to

present the story. When I was satisfied with the result, I presented my work in two, separate ‘private performances’.

The sole spectator of ‘private performance (1)’ was one of my supervisors from the theatre department. My two supervisors alternated in this role, and they looked at the performance from a theatrical point of view, giving me technical feedback. The sole spectator of ‘private performance (2)’ was one of my supervisors from the museum department. Again, my two supervisors alternated in this role, and they looked at the performance from a point of view closer to the one of a hypothetical ‘general audience.’ Through this double set of feedback, I implemented the theatrical aspects of my performance, and then I immediately verified the result of the modified version of the performance with a different spectator.

This circular process concluded with a ‘reflections’ phase, in which I further modified my performance and listed the ‘lessons learned’ before moving to the research of another object/story. Sometimes, I needed to go through the circular process more than once to define an exhibit and its related object/story.

In this first section of this chapter, I start presenting the materials that I have used in my performance. I then present the guiding principles that I have followed to organise these materials. After that, I describe the creative process that transformed the performance from a ‘teatro di narrazione’ piece to a Kaprowian activity. Finally, I conclude with a discussion on the functions of the objects in the context of my performance.

## **Materials**

The materials that I use in my performance come from multiple sources. Some of these materials were the inspiration for my performance, while others became objects and stories in my performance. I divide these materials in three categories. First, the books that I have read before starting my research. Second, the written texts that I have read during my research. Third, the objects that I have found in my erratic walks (see Figure 7).



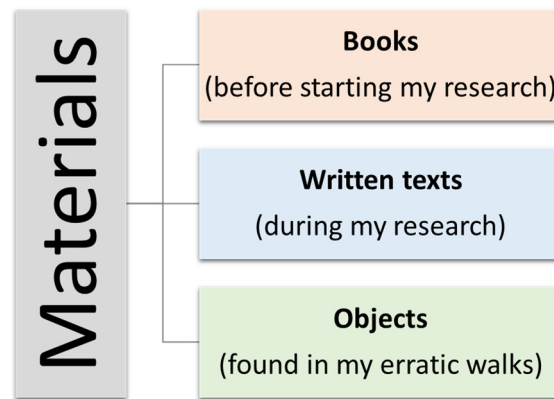


Figure 7: The materials of the performance

Before starting my research, and over a period of several years, I read three books that became the foundation stones of my performance. The first book is *Dialogo sul metodo* (Feyerabend 1989). Its author, Paul Feyerabend, was a well-known Austrian-born philosopher of science. This book exists only in Italian, because Feyerabend wrote one of the two dialogues that make up the book just for the Italian edition of an older dialogue published in Holland in 1979. Feyerabend wrote in the dialogic form as a direct reference to the Socratic dialogue as presented by Plato in the *Theaetetus* – an excerpt of this Greek dialogue opens Feyerabend’s book. Feyerabend wrote the entire book as a dialogue between ‘A’ and ‘B’, and the subject of the dialogue is science: its limits, its role in the society, and the distinction between what science is and what science is not. This book was my first encounter with Feyerabend’s critical approach to science and scientists, and deeply influenced my approach to science.

The second book is *Il Sistema periodico* (Levi 1975).<sup>60</sup> In 2006, the Royal Institution recognised this book as “the best science book ever written” (Randerson 2006). The author of the book is Primo Levi, an Italian holocaust survivor. Trained as a chemist, Levi centred – literally or metaphorically – each one of the 21 chapters on a particular element of the periodic table (Argon, Hydrogen, Zinc...). Levi wrote the book as “a micro history, the history of a trade and its defeats, victories, and miseries” (Levi 1984, 232). The book, then, is about chemistry (the “trade” of chemistry), but Levi wrote about chemistry through invented stories as well as personal stories (stories from his student years, from the holocaust, from his working years). The result is a

<sup>60</sup> English edition: *The Periodic Table* (Levi 1984).

personal, intimate book in which chemistry is everywhere: in everyday life, in human tragedies, and in fictional stories. This emotional, visceral and imaginary approach attracted me, because the science of chemistry, in Levi's book, is an integral part of human life.

The last book is B.S. Johnson *In balia di una sorte avversa* (B. S. Johnson 2011).<sup>61</sup> This book is a 'book in a box': the book exists inside a box as 27 separate sections that are not bound together. The readers decide the order in which they want to read the sections, and only the first and last sections are identified as beginning and end. The sections are of unequal length, and each section is a fragment of the memory of a journalist who finds himself in the city of a former friend. This book suggested to me an interesting relationship between reader and author, a relationship in which authorship is shared and the reader's choices shape the final text. Moreover, from a structural point of view, my 'museum in a pizza box' is a science exhibition version of this 'book in a box'.

The second category according to which I divided my materials is a collection of the texts that I read during my research. During my research, I read two types of texts. First, specialised books and journal articles. Second, science communication books, newspaper and magazine articles aimed at the general audience. The first type of texts is relevant for the theoretical framing of my research, and I speak about these texts in chapter 2. The second type of texts provided me with suggestions for objects and stories that I presented in my performance (I list these texts in Annex II, p. 229).

The third and last category in which I divided my materials collects together the objects that I found in my erratic walks. I wanted my performance to have an everyday approach to science. Thus, I explored supermarkets and second-hand shops to find everyday objects that could work in my performance. I was especially attracted by cheap, common items that everyone could have handled, for example sterile patches and glowing sticks. This approach, in which common objects played a key role, also drove me to use pizza boxes to store and transport my performance.

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<sup>61</sup> English edition: *The Unfortunates* (B. S. Johnson 1969).

From these disparate materials, objects/stories emerged during my rehearsal process. I needed then to select and organise these objects/stories in exhibits to create a performance, and to this end, I followed few guiding principles.

### **Guiding principles**

My first guiding principle was my primary research question: “How can a guided tour be an engaging and effective way to communicate with visitors about science?” In answering this question, I considered the guided tour to be a performance, and the tour guide to be a performer. In other words, I explored the use of theatre techniques for personal live interpretation inside (and outside) the science museum (see my discussion on heritage interpretation, p. 38). I consider the museum guided tour to be the actual performance of the cultural performance of a museum exhibition (see p. 49). From this perspective, I needed a museum, and my first task was then to select and organise my material in a science-museum-way. To achieve this aim, I relied on *Back to basics*, a “manifesto for creating engaging science, technology and medicine exhibitions” compiled by Ken Arnold and Thomas Söderqvist (Arnold and Söderqvist 2011).

Three concepts of this manifesto were particularly relevant during the creation of my museum. First, the idea that “curators should use exhibitions to find things out (for themselves and for their visitors) and not just regurgitate what is already known” (Arnold and Söderqvist 2011, 24). I then tried to select topics on which I had contrasting opinions, hoping to explore new points of view through a dialogue with the participants.

Second, the suggestion that “less is usually more in exhibitions. Visitors will remember and enjoy looking at 10 carefully selected things more than a 100 that are reasonably well selected” (Arnold and Söderqvist 2011, 26). Following this suggestion, I limited myself to seven exhibits.

Third, the fact that “audiences come to exhibitions in their free time and deserve to be lifted out of themselves” (Arnold and Söderqvist 2011, 26). Entertainment had then to play a key role, and this idea was reinforced through the advice to “never make exhibitions for educational purposes” (Arnold and Söderqvist 2011, 26). My museum should aim (also) to entertain its visitors.

Once I started to have some ideas about my museum, I also started to craft the guided tour that would interpret my collection.

First, I turned to a classic of interpretation, Freeman Tilden's seminal book *Interpreting Our Heritage* (Tilden 2007). Despite agreeing with Staiff's critique of Tilden's work (see chapter 2, p. 39), I found that the first one of Tilden's 'six principles of interpretation' was relevant for my research. Tilden's principles are general, and they do not define any particular structure for a guided tour. The first principle states that: "Any interpretation that does not somehow relate to what is being displayed or described to something within the personality or the experience of the visitor will be sterile" (Tilden 2007, 34). This first principle, then, highlights the importance of relating what is presented to the visitor to the visitor's personal experience.

This idea finds its confirmation in the research of Tsybulskaya and Camhi (2009) (see chapter 2, p. 32). Tsybulskaya and Camhi explored the role played by the visitors' entrance narratives during a guided tour. The visitors' entrance narratives are all the previous experience, interests and information that each visitor brings to a tour. The two researchers showed how "accessing and incorporating participants' entrance narratives profoundly enhanced their experience [of the tour]" (Tsybulskaya and Camhi 2009, 81). Starting from these researchers' findings, I tried to create a performance tailored each time to meet my participants' personal experiences and interests. To achieve this aim, I decided to start the presentation of each exhibit by asking the participants about their previous experiences and knowledge of the exhibited object (and related ideas).

After Tilden's first principle, I turned to Antonin Artaud and his belief that theatre should provoke its audience (Artaud 1985). While Artaud (famously and controversially) suggested extreme and physical ways to shock the audience, I was interested in finding ways to challenge the participants from an intellectual point of view. Nevertheless, at the same time I did not want to frustrate the participants with an over intellectualised, daunting performance. To strike the right balance and to create an entertaining experience that would have not been either boring or stressful, I merged the idea of 'performance as provocation' with Csikszentmihalyi's concept of flow (Csikszentmihalyi 2008, 74). In his analysis of Csikszentmihalyi's work, Daniel Pink describes how in flow:

the relationship between what a person had to do and what he could do was perfect. The challenge wasn't too easy. Nor was it too difficult. It was a notch or two beyond his current abilities, which stretched the body and mind in a way that made the effort itself the most delicious reward. (Pink 2011, 115)

Flow, then, seemed the perfect reference point for the kind of experience that I wanted my participants to have: an experience (performance) that could be entertaining (see also my discussion on entertainment, p. 50). Pink lists three conditions that can facilitate a flow experience: "Create an environment that makes people feel good about participating. Give users autonomy. Keep the system as open as possible." (Pink 2011, 167). These three conditions, together with the idea of flow, informed the way in which I structured my performance. I decided to let the participants choose which exhibits they wanted to explore. Furthermore, I structured the presentation of each exhibit including an open-ended dialogue during which the participants could autonomously interrogate the objects/stories. Finally, I took responsibility for keeping this open-ended dialogue interesting (asking questions or providing information) and bringing the dialogue to an end when the discussion was over.

In conclusion, I focused on what I can define as 'personally relevant and provocative entertainment' to create a performance that – inspired by a guided tour – could be an engaging and effective way to communicate science from a critical perspective.

### **From *Teatro di Narrazione* to activity**

In this part, I present the performance approaches that I used during rehearsal. I started my rehearsal using *Teatro di Narrazione*, I then switched to variety show, and finally I merged variety show with activity (Kaprow 2003), while keeping narrative a key element of my performance.

My artistic background in theatre is linked with an Italian form of storytelling called *Teatro di Narrazione*. *Teatro di Narrazione* is an umbrella term that loosely defines the work of several artists of theatre that give the direct narration to the audience a predominant role (Nosari 2004). These artists are usually the writer, the director and

the performer of their solo works, and they present themselves without any *dramatis persona* (Soriani 2009, 14). In other words, they tell the stories, they do not represent the stories, presenting themselves as themselves and with no fourth wall (Guccini 2004, 12).<sup>62</sup> The direct, “poor” (Grotowski 2002) way of staging that characterises *Teatro di Narrazione* fitted my aim of creating a simple performance, as I was looking for a performance that I could do in non-theatrical settings. Furthermore, in *Teatro di Narrazione*, the performance is created with the input of the audience through a long series of trials and only after few months the performance reaches a more structured form (Soriani 2009, 32). This idea of performance-in-progress fitted the cyclical nature of my research method (action research, see p. 69), thus providing me with the ideal approach to the creation of a performance that was built around the participants’ interests.

However, at the beginning of my rehearsal process, it became clear that there was a risk of creating an unengaging show, given the episodic nature of my performance. I was presenting all the exhibits through a simple narration that was unlikely to provide enough variations and thus keeping the participants’ interest – even when incorporating the participants’ entrance narratives in my narrations. One of my supervisors suggested then the idea of presenting each exhibit in a different way, using the variety show as a model. Drawing on John McGrath’s ideas on popular theatre (McGrath 1996), I started experimenting with different theatrical forms, such as puppetry, magic show, music and so on. Each exhibit became then defined by a specific theatrical approach, and the sequence of exhibits created a variety-museum-show.

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<sup>62</sup> Dario Fo – particularly through his performance *Mistero Buffo* (1969) – is considered the godfather of *Teatro di Narrazione*. Fo combines in himself the author/director/actor roles, thus freeing himself from every possible over-imposed, pre-performance constraint (Nosari 2004, 14). Thanks to this freedom, Fo is ready to engage with an audience that he recognises is always different in each performance, and with whom Fo desires to build a direct dialogue (1991). Even if Brecht is sometimes considered a reference point for Fo and *Teatro di Narrazione* (Meldolesi and Guccini 2004, 4), the artists, even if without denying the assonances with Brecht’s theoretic position, claim a different genealogy. Fo, in particular, is eager to identify himself as the heir of the comic and popular tradition that goes back to the *Commedia dell’Arte*. Fo prefers to speak about his theatre as ‘popular-epic’, highlighting how the use of the third person narration has been inspired in him not by the Brechtian reflection, but by the popular way in which stories have been usually narrated in the Italian tradition (Soriani 2004, 27).

The structure of the performance was now potentially effective in entertaining the audience. However, I was not satisfied with the relationship between the audience and myself. Each exhibit had a clear theatrical dimension, so now I was running the risk of creating a separation between the participants and myself: they were the spectators, I was the entertainer. This separation would have worked against my guiding principle of facilitating people's participation and more generally of creating the condition for a flow experience. Thus, inspired by Allan Kaprow's writings on happenings and activities (Kaprow 2003; Kaprow 1966), I decided to blur the distance between performance and everyday life (see also my discussion on Kaprow in chapter 2, p. 45 and p. 48). Allan Kaprow's artistic research focused on the blurring of art and life: "The line between art and life should be kept as fluid, and perhaps indistinct, as possible" (Kaprow 1966). Kaprow explored this aim through live performances that he called happening and activities (Morgan and Kaprow 1991). Activities are the development of happenings, and while happenings still had some vestigial theatrical components, activities explored deeper the liminal space between art and life (Kaprow 2003, 87). With his activities, Kaprow explored everyday gestures and actions (for example, brushing the teeth) through conscious repetitions (Kaprow 2003, 221). The difference between the everyday actions and the activities was in the performer's awareness that the action was intentionally performed (see my discussion on performance, p. 43). Thus, for an external observer, there was no performance at all. Following Kaprow's intuitions, I made every part of my performance lifelike, except for some of the theatrical presentations. The performance was then *the performance of a dialogue on science* among all the participants, myself included, even if my contributions to the dialogue were sometimes dramatic. My attempts at creating a lifelike performance were so successful that a colleague from the theatre department got upset when I performed my museum with him, and after fifteen minutes he asked me if I was going to perform at all. His reaction prompted me to introduce my performance more clearly, so that the participants would not develop expectations of me acting in front of them.<sup>63</sup>

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<sup>63</sup> This is a further common point with a Kaprowian activity. As Kaprow explains: "An orientation has proved not only useful but necessary, since invariably no one knows how to deal with such a project. Orientation thus becomes part of the piece, as does any discussion during and after" (Kaprow 2003, 192).

Nevertheless – as I was suggesting before – even if my performance had a lifelike Kaprowian activity as one of its reference points, I kept some part on my performance with a theatrical dimension. Specifically, I tried to maintain a distance between the form of the exhibits and their contents, to try to provoke surprise during the participants’ process of exploration of the exhibits (I will specifically discuss this topic in chapter 5, p. 182).

### **Objects as performers**

Objects play a key role in my performance. Objects are one of the two halves of the object/story elements (see p. 115). In addition, objects are the physical centre of the exhibits of the performance. To describe the role that objects have, it is useful to draw parallels with Pickering’s ideas on science (see chapter 2, p. 55). Pickering’s framework focuses on the interaction between human and non-human agents in the creation of a practice. Pickering’s central concept is “the mangle of the practice” (Pickering 1995, 23). According to Pickering, scientific practice is the result of the alternation between the scientists’ agency and the agency of the objects (machines) with which scientists deal. In other words, Pickering suggests a *performative* science, in which “the performance – the doings – of human and material agency” are central (Pickering 1995, 21). Thus, Pickering defines science (or at least its practice) as the result of the constant interaction between scientists and objects.

The objects in my performance play a similar role in defining what science is for the participants. It is through the interaction (physical and intellectual) between the participants and the objects that science – as experienced (performed) everyday by the participants – is the centre of dialogue. The objects, then, are active actors in the construction of the participants’ knowledge. As actors of the performance, objects perform three functions. First, they are museum objects. Second, they are social objects. Third, they are theatrical objects. I imagine these three functions as coexisting and interacting one with the other (see Figure 8).



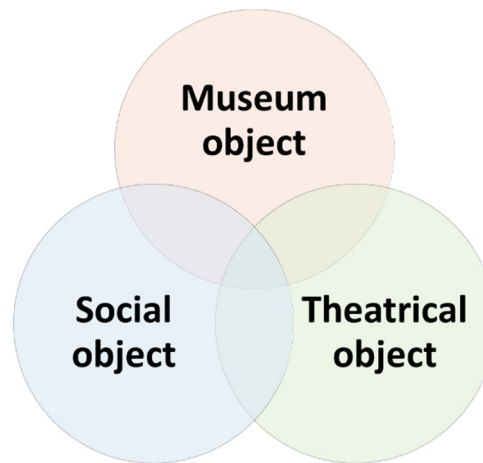


Figure 8: *The functions of the objects in my performance*

First, the objects of the performance are museum objects. The performance's starting point is the guided tour, and from this point of view, the objects are objects of a museum, the *Science Museum in a Pizza Box*. Museums usually exhibit “the real thing” (Arnold and Söderqvist 2011, 25), and visitors come to the museum also to have a direct experience of the authentic object. The objects of my museum performed this function, as, for example, the Petri dish that is part of my performance is a real Petri dish that I have borrowed from the Biology Department of Victoria University. That Petri dish has been used to do scientific experiments.

Second, the objects of the performance are social objects. According to Nina Simon: “A social object is one that connects the people who create, own, use, critique, or consume it. Social objects are transactional, facilitating exchanges among those who encounter them” (Simon 2010, 129). A social object is the ideal starting point of a dialogue, as “social objects allow people to focus their attention on a third thing rather than each other, making interpersonal engagement more comfortable” (Simon 2010, 127). The objects of my performance work as facilitators of the dialogue among strangers. For example, the Petri dish performs as a social object when people start to discuss their memories of using a Petri dish during science classes. The same is true when people have no clues about what is “that glass object” that I call a Petri dish, and they collaborate in making sense of it.

Finally, the objects of the performance are theatrical objects, as they are part of a performance. Specifically, the objects are props: tri-dimensional symbols that have also “temporal and spatial dimensions” (Sofer 2003, vii). The participants and I interact with the objects, touching them, moving them and using them to illustrate a point. In

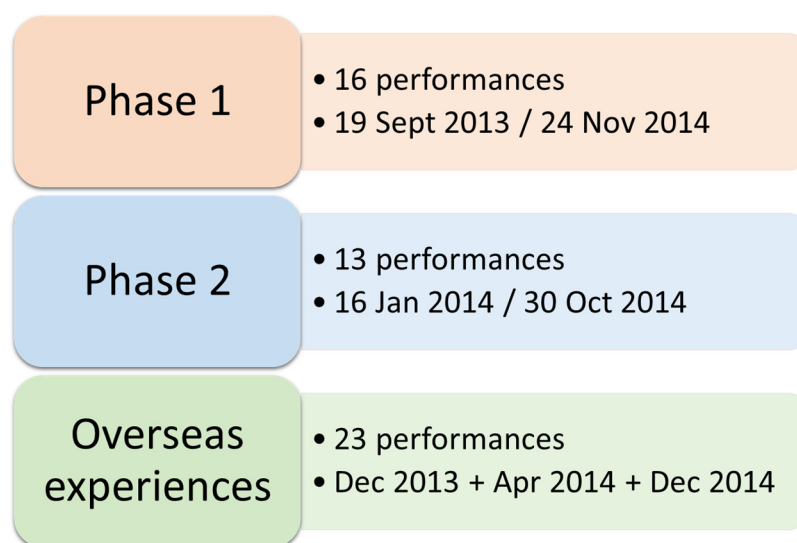
addition, I sometimes use the objects in a way that makes the objects perform a different function from their original one. For example, I have filled the Petri dish with jelly beans, thus transforming the object from a scientific incubator to a candy box.

These three functions that the same object can perform (museum object, social object, and theatrical object) coexist in the object. The unifying trait is science: the object is a scientific object, which can foster a dialogue on science, while being part of a performance on science. The object, then, through its different functions, plays a key role in enabling the participants in performing science as a cultural performance (see my discussion on science, p. 55).

## 4.2 Experimentation

Through the rehearsal process, I created a first version of my performance. After that, I started to test the effectiveness of the performance with real participants. During this experimentation stage, I modified my performance to meet my participants' needs and suggestions. I realised then that, even if I had performed during rehearsal, the distance between rehearsal conditions and real conditions was significant.

I divide this part of my research, in which I was testing and adapting my performance, into two phases. The first 16 performances constitute phase 1, while the second 13 performances constitute phase 2. I add to these two phases another category of performances: the performances that I did overseas (outside New Zealand and specifically in San Francisco, London and Milan) (see Figure 9).



*Figure 9: Experimentation phases and overseas experiences*

The discussion of the two phases of my experimentation focuses on my role during the performance and some changes in the structure of the performance. The discussion of the overseas experiments reflects on the challenges that I have encountered when performing in different cultures.

During phase 1 and 2, I have consistently delivered my performance by scooter, using the same 'costume' (see Figure 10).



*Figure 10: The performer and his scooter*

The two pizza boxes (and the sheep skull) travelled inside the top-box of my scooter. If the participants chose a location too far away to use the scooter, I used public transportation (train and coach). Delivering my performance in pizza boxes by scooter – and being Italian – was an effective strategy to present science through an everyday staging: the pizza man. Most of the time, I dressed in the same costume: a white shirt, blue jeans and a blue zipped sweater. I chose these clothes because I was looking for a casual look while hoping to give, through the white shirt, a neat impression. I also shaved on the day of the performance.

In the first part of this section, I present phase 1 of my experimentation. I then describe phase 2 and finally I discuss my overseas experiences.

### **Phase 1**

During phase 1, I was concerned about failing. I was concerned about the effectiveness of my choices, about what the participants would think of the performance, and about whether I would be able to have participants and not just spectators, despite all my efforts during rehearsal to create a performance that would foster participation. Repeating the performance helped me in accepting the possibility of failure, as well as in adjusting the exhibits of the performance. My role in the performance was central

during this first phase of experimentation: I was trying to control the performances as well as direct the dialogues.

I performed for the first time the *Science Museum in a Pizza Box* on 19 September 2013. During the first three times, I was so tense that I forgot to do the word association game at the beginning of the performance (see Figure 5, p. 112). Nevertheless, the theatrical presentations of the exhibits are one aspect of the performance that has worked fine since the beginning. The objects and the stories (and the information inside the stories) are all potential starting points for dialogues. The dialogues could start with a few remarks about the physical dimension of the objects, and then move on to the functions of the objects. Finally, the stories and the information would be objects of analysis. This sequence (objects, stories, information) is just one of the trajectories that the dialogues could take, even if in phase 1 I was quite concerned about the development of the dialogues and I suggested reflections and actively encouraged participation, thus reducing the variations that could have spontaneously emerged.

The sixth performance represented a turning point. I did this performance in an office at Victoria University. My two participants were experts in specific scientific fields, and they chose the exhibits that most resonated with their expertise. This was the first time that I was testing the accuracy of my scientific information at a doctoral level. The test went fine, but more importantly, I realised that I did not need to know all that I knew. My participants were eager in sharing with me their knowledge, and happy to find that there were exhibits related to their interests and on which *they* could comment on. I started to realise that the most important part of the performance was listening, and not speaking.

During phase 1, I realised that two exhibits were not working. The first exhibit that was not working was the 'sterile pad'. I selected a sterile pad because it was a cheap, common object that is possible to buy in supermarkets. Theoretically, it was a good starting point for a dialogue about sterile equipment, bacteria and the debate on the origins of life as discussed by Collins et al. (Collins and Pinch 1998, 79). I decided to present the sterile pad through a combination of hands-on and wooden puppets. First, the participants opened the sterile pad, then we had a dialogue about what it meant for something (a bandage, a scalpel, etc.) to be sterile. Then, I presented the debate between Pasteur and Pouchet on the origins of life through wooden puppets. After performing

the sterile pad twice, I realised I was not able to reach my aim. I was not able to present quickly and simply the key ideas on sterilisation. Instead of offering seeds for a dialogue, I was generating only confusion. After the seventh performance, I decided to substitute the ‘sterile pad’ exhibit with the ‘Petri dish’ exhibit. This exhibit focused on the stories of Julius Petri and Fanny Hesse.<sup>64</sup> It worked fine and it prompted interesting and different dialogues, for example about the role of gender in science, or about the relationship between innovation and science.

The second exhibit that was not working was the ‘rabbit/duck’, and specifically the story that I was presenting during the participants’ exploration of this exhibit. The object in the rabbit/duck is a wooden object that looks like both a rabbit and a duck. It is an object that I designed and created inspired by Russell Hanson’s discussion on the figures included in Wittgenstein’s *Philosophical Investigations* (Hanson 2001). Whoever looks at the rabbit/duck can see either a rabbit or a duck. I really liked this object, and also the participants seemed to like it: it is a visual illusion, it is funny and surprising (see Figure 11).



Figure 11: The ‘rabbit/duck’ exhibit

However, the first story that I elaborated to accompany this object did not work. It was a very complicated story about how an action can be described in different ways according to the point of view that one adopts. I then found in *Bad Science* a numerical example of how the same data can be presented in different ways (Goldacre 2008, 256). I built around those numbers a simple story that had my uncle and his son as

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<sup>64</sup> Julius Petri invented the flat lid that replaced the bell-shaped lid to close the glassware used to cultivate microorganisms. The Petri-dish is named after him. Fanny Hesse suggested to her husband to use Agar-Agar as a nutrients sub-stratum in Petri-dishes to cultivate microorganisms.

protagonists. This second version, shorter, funnier and with a personal link, worked well ever since the first time that I performed it (eighth performance), and I then decided to keep it.

The sterile pad and the first version of the story of the rabbit/duck needed a complete substitution. Other exhibits, without needing a complete substitution, needed adjustments. In general, all the adjustments that I made were toward simplification: a story with fewer passages, an exhibit with fewer elements and so on.

For example, the exhibit that I call ‘sweetener’ needed some intervention. During the theatrical presentation of this exhibit, participants are invited to remember and sing a lullaby. At the beginning of my experimentation, participants sang in the middle of the dialogue, but this created an awkward moment that was interrupting the flow of the participants’ experience. After a performance during which the participants chose the sweetener, these participants suggested that I should have moved the song to the beginning of the dialogue, thus taking them by surprise and avoiding having to interrupt their dialogue later on. This suggestion proved to be a good solution, and I have used it since then.

By the end of phase 1, and with my participants’ help, I had finally shaped the seven exhibits and the related objects/stories of the performance. This meant that for each exhibit I had a clear theatrical approach and a clear (even if wide) angle to present my stories (see Figure 12).



Figure 12: The seven exhibits of the performance (name, theatre technique, main focus point)

Phase 1 ended with a performance that was more straightforward than the initial one. I was presenting the objects in a cleaner and minimal way, while telling shorter and simpler stories. Furthermore, thanks to the dialogue with the participants, I enriched my repertoire of stories and information. Through repetition, I also discovered that as long as I shaped the performance around the participants (as I was supposed to do according to my guiding principles and the guides' interviews), the performance could not fail. The participants were eager to take responsibility for the performance, and I was finally ready to let them do so.

## **Phase 2**

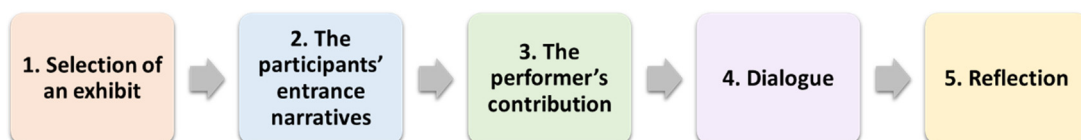
During phase 2, I progressively reduced my control over the performances, until my role during the performances was peripheral. I provided the exhibits, some stories and information about the objects, and then let the participants freely have a dialogue about whatever they thought was interesting. This loss of control over the contents of the performance was key in fostering a dialogue that created new knowledge (see my discussion on dialogue in chapter 2, p. 60). Without this loss of control, I would have only transmitted information. During this second phase, a model of how to nurture a dialogue slowly emerged.

Phase 2 of my experimentation started on 16 January 2014, with a performance for the staff of the Royal Society of New Zealand. My focus was on what the audience was doing: I had internalised the structure of the performance, and I was interested in exploring my participants' perceptions on science. Most of the people had a specific perception on science, and the performance took off easily *after* the first exhibit. This fact, that the first exhibit played a central role in the development of the performance, emerged as a clear trait of the performance during phase 2. The performance always started with an introduction that explained the ground rules and anticipated what would happen. However, it was only going through the first exhibit that people really understood the nature of the performance. Furthermore, the participants usually had some kind of expectations as soon as they saw the exhibits. For example, most of the participants thought that the sheep-skull exhibit would have dealt with natural history,



but the story was about radioactivity in the Lake District (United Kingdom). Once the participants discovered that each exhibit was unpredictable in its approach to science, they got more interested. They started asking questions to get some clues about what the exhibits focused on. They started building hypotheses about the story that I was going to suggest for a particular object. Therefore, the participants typically chose (through a general discussion or, if they reached an impasse, voting) the first exhibit through a process of exclusion (“I am not interested in this and this, let’s choose this”). By contrast, the participants chose the subsequent exhibits through a process of exploration (“I wonder what this will be about”).<sup>65</sup> This change in attitude toward the choice of the exhibits was evident during the selection of the last exhibit, as each one of the participants wanted to satisfy her curiosity and the fourth – and last – exhibit was the last chance to do so. In the few cases in which a participant did the performance more than once, that participant did everything in her power to drive the selection of the group toward the exhibits that she had not yet explored.

Towards the end of phase 2, a communication model started to emerge. While each exhibit had a specific theatrical trait, the way in which every exhibit became the subject of a dialogue followed the same pattern. From this point of view, I can speak about a model of communication that fosters dialogue on an exhibit (see Figure 13).



*Figure 13: The model of communication to foster dialogue on an exhibit*

This model starts with participants selecting an exhibit. During this first step, group dynamics start to emerge, as the selection of the exhibit is a collective task. I ensure during this step that everyone has the chance to express her preferences. It is a delicate moment, as I need to give the participants freedom but, at the same time, I need to prevent any participant from taking a leading role, otherwise the multiplicity of the group could be spoilt by the singularity of one individual.

<sup>65</sup> See the next chapter for a deeper analysis of the participants’ experience of the performance.

In the second step of the model, participants talk about their entrance narratives (see p. 32). In other words, participants talk about their previous knowledge and personal experiences of the exhibited object(s). Key, in this second step, is that the participants are at ease: participants have to feel comfortable in asking questions and in expressing what they think without fearing judgements. Equally important is for me to listen to participants and keep asking questions to discover as much as possible about the participants' entrance narratives.

The third step is when I theatrically present the exhibit. This presentation is linked with the story from the object/story pair (see p. 115), and it can take different forms, such as a narration, a magic trick, and so on (see Figure 12, p. 131). However, regardless of the nature of the presentation, the presentation has to be well connected with the participants' entrance narrative. This means that I have to improvise and adapt my presentation to integrate the participants' inputs. For example, if a participant did some experiment using a Petri dish (such as growing bacteria or fungi), during this step I would refer to that specific experiment in my presentation. This presentation is my contribution to the model (the performer's contribution).

The fourth step is a dialogue. A dialogue that happens first among the participants, and only later involves also myself. During this step, I might decide to add further stories and/or information to the dialogue, in the same way in which participants share their points of view on my presentation and on each other's ideas on the exhibit. This dialogue is effective if participants share different ideas without the need to reduce all the ideas to a single point of view, but fostering multiplicity (see my discussion on dialogue in chapter 2, p. 60). Furthermore, this dialogue is effective if each participant enriches her point of view with someone else's point of view.

The fifth and final step is a reflexive moment. Participants (including myself) rethink their journey, from the selection of the exhibit to the dialogue, and reflect on the different ideas that have emerged. It is important to note that from my point of view, this final step is not a moment of synthesis. In other words, this model is not a dialectic process that aims to define the truth of an experience, through a thesis, then an opposite antithesis, and finally a conclusive and conciliatory synthesis. The model that I am proposing represents a process in which multiple points of view get enriched while remaining multiple. The aim is not to create a definitive and singular truth, but to recognise complexity and multiplicity. This multiplicity is in itself the critical approach

that my performance fosters (see also my discussion on science communication, p. 59).<sup>66</sup>

I can integrate this model in the general structure of the performance, thus presenting a more accurate description of my performance (see Figure 14):<sup>67</sup>

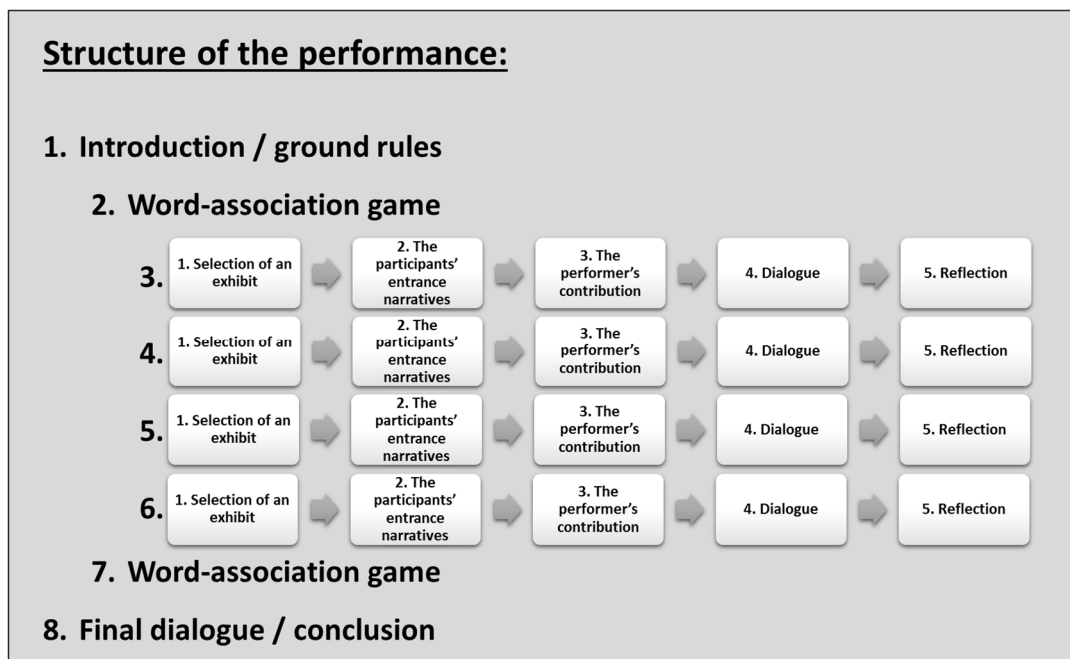


Figure 14: The structure of the performance (see Figure 5) integrated with the model of communication to foster dialogue on an exhibit (see Figure 13)

This structure is symmetrical and circular. These characteristics resonate with the recursive nature of my methodology, action research (see p. 69). Furthermore, the performance has a symmetrical and circular structure because I wanted to create a performance that fosters reflexivity. Thus, even if at the core of the performance I placed entertaining stories, the overall aim of the performance is to foster the exploration of one's opinions on science and scientists. These opinions, stated at the beginning of the performance during the word-association game, were challenged

<sup>66</sup> It is interesting to note that when I asked my participants to define an exhibit after the dialogue (formulating a hypothetical label), the participatory experience collapsed. Single definition and participation are apparently incompatible, at least in the context of my performance.

<sup>67</sup> While this model of communication helps me in describing what happens during the performance, it is important to remember that it is just a model. Once again, the map is not the territory.

during the dialogues on the exhibits. At the end of the performance, when the participants played again the word-association game, they might discover that they have changed their points of view. Even if the participants did not change their points of view, the process of reflecting on their points of view made the participants aware of their opinions on science (I further explore this point in chapter 5). The discussion, challenge, reconfirmation of these opinions on science is part of the critical approach that my performance fosters. It is useful to remember here that I have highlighted how science is “a social construct, which the whole society is involved in creating” (Erickson 2005, 3) (see p. 55). Actively discussing science is then a social changing activity, an activity in which each opinion matters and contributes to the overall definition of science as cultural performance. If this discussion happens through a Bohmian dialogue, the result is that the participants create “something new together” (Bohm 2013, 3), thus redefining what science is in our contemporary society. From this point of view, my performance does not aim to communicate science. My performance aims to constantly re-create science as cultural performance, starting from the participants’ opinions, and through an entertaining experience.

Phase 2 ended with a performance in which my role was peripheral. While I was definitively coordinating the performance, I was no longer exclusively in charge of its contents. I took active part in the dialogues, even provoking them through the theatrical presentation of the exhibits. Nevertheless, the participants took responsibility for the dialogues, while I had only to take care of the passages between the different exhibits. My main task was then to have the performances moving on smoothly, suggesting the right moment to explore new exhibits, and providing the right timing for the overall experience.

### **Overseas experimentations**

I performed in three countries outside New Zealand: United States, United Kingdom and Italy. I can divide these performances in two groups: performances that I did in December 2013, and performances that I did in April and December 2014.

The first group of performances took place between London and Milan, and were instrumental in subsequently presenting my work inside a few cultural institutions during 2014. This first group of performances had typically a single participant, who was a key person inside a cultural institution that could have been interested in presenting my work to its staff or visitors.<sup>68</sup> These performances all went well and allowed me to obtain official invitations from European cultural institutions. Furthermore, after one of these performances, the director of the Education Department of the Italian National Museum of Science and Technology Leonardo Da Vinci put me in contact with the Exploratorium of San Francisco, helping me in arranging the presentation of my performance for the staff of that institution.

For these performances I used a basic version of six of my seven exhibits (see Figure 12, p. 131), as space and weight were an issue and it was problematic travelling with a sheep-skull. Thus, while I did not change the objects exhibited, I sometimes changed the way in which the objects were presented. For example, I exhibited the deck of cards on a plain square of blue fabric, instead of the wooden round platform that I typically used. These performances contributed to the passage between phase one and phase two of the experimentation, because it boosted my confidence to see that museum and science communication experts favourably received my work.

The second group of performances took place in San Francisco, London, Milan and a few small cities in the north of Italy. These performances were of four types: presentations to staff of cultural institutions; performances for visitors of cultural institutions; performances for high-school students; performances in private houses.<sup>69</sup>

I used for these performances a version of my seven exhibits that was different from the one described as the result of phase one (see Figure 12, p. 131). Specifically, two things changed. First, the sheep-skull was a plastic replica. This choice prevented me exhibiting “the real thing” (Arnold and Söderqvist 2011, 25), and thus to present participants with an authentic object. However, travelling with animal bones was not

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<sup>68</sup> For example, those responsible for the visitor services or the visitor experience manager.

<sup>69</sup> The cultural institutions involved in my experimentation were: Exploratorium (San Francisco, USA), Wellcome Collection (London, UK), Natural History Museum (London, UK), Italian National Museum of Science and Technology Leonardo Da Vinci (Milan, Italy), Liceo Internazionale per l'Innovazione Olga Fiorini (Busto Arsizio, Italy). See Annex 1 (p. 226) for a full list of the performances.

feasible, and acquiring a real sheep-skull in Europe would entail a long and expensive task. Nevertheless, some of the participants thought that the sheep-skull was a real one, and their first reaction supported the idea that the replica was effective in giving to some participants at least the impression that the exhibit was “real.”

Second, I did not take with me the exhibit ‘badge’, as it had a strong focus on New Zealand, hence I judged it inadequate for an international audience.<sup>70</sup> Instead, I developed a new exhibit – called ‘maize’ – that focused on genetically modified organisms. See Figure 15 for a picture of the exhibit.



*Figure 15: The ‘maize’ exhibit*

The presentations to staff of cultural institutions were different from all the other performances, because staff typically had time only for a couple of exhibits (as opposed to four), and the short performances were followed by specialist discussions about my research. Staff were generally difficult participants, because they tended to analyse the performances instead of enjoying them. This situation was not lost on all the participants, as one of the staff of the Museum Leonardo Da Vinci noted how they were “the worst possible audience.” Nevertheless, the discussions that followed these performances helped me in strengthening my academic argument.

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<sup>70</sup> The exhibit ‘badge’ focused on nuclear energy and the theoretical contribution that a New Zealand scientist – Ernest Rutherford – gave in developing such energy. For a photograph of the exhibit, see Figure 20, p. 178.

All the other performances (performances for visitors of cultural institutions; performances for high-school students; performances in private houses) were valuable in exploring the different ways in which participants from different cultures received the *Science Museum in a Pizza Box*. While the general structure of the performance (see Figure 14, p. 135) stayed the same, the reactions that some participants had to some exhibits appeared to be rooted in the participants' culture. This fact was not unexpected: John McGrath points out how art is not universal, and different people create different meanings when presented with the same play (McGrath 1996, 3). Furthermore, Peter Brook discusses how he adapted his plays according to the country in which the plays were performed, tuning his actors' delivery to match the expectations of the different audiences (Brook 1989, 35). My performance was shaped around the audience through improvisation, and thus the participants directly influenced the tone of my interactions. From this perspective, performing in different cultures was not radically different from performing with any other audience. However, what was different were the cultural reference points that the participants had and used in making sense of the exhibits. For example, the sheep-skull exhibit. As I have already pointed out, this exhibit looked remarkably similar in its two versions (bone vs. plastic). Nevertheless, while in New Zealand the participants immediately recognized the skull as a *sheep* skull, both in the United Kingdom and Italy the participants struggled to identify the skull as a sheep one.<sup>71</sup> Moreover, most of the New Zealand participants had some first-hand experience in handling sheep, and these experiences fed into the story linked with the exhibit. By contrast, United Kingdom and Italian participants had very limited first-hand experience with sheep. Finally, the content of the exhibit revolved around the radioactive cloud generated by the explosion of the Chernobyl nuclear power plant in 1986. Specifically, how that cloud affected sheep farming in the Cumbria region, a north-west part of England. Surprisingly, the United Kingdom participants were the ones struggling more in recollecting these events, while some New Zealand participants were highly knowledgeable about these episodes and Italian participants generally had a good memory of the Chernobyl disaster. These differences meant that I had to find every time the right way to connect the exhibit to the participants' lives. For example, in New Zealand I usually focused on the participants' first-hand experience in handling

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<sup>71</sup> I did not take the sheep-skull exhibit to the United States.

sheep, while in Italy I typically focused on the food restrictions that followed the Chernobyl disaster which most of my participants remembered.

Another example is the Petri dish exhibit. This exhibit was made of the same elements in every performance: a light-pink square of thick paper with a Petri dish full of jelly beans on top of it (see Figure 12, p. 131). This exhibit could prompt dialogues on gender and science, and the colour of the paper under the Petri dish was sometimes an object of discussion. Specifically, in the United States some participants accused me of supporting the stereotype that links women with the colour pink. By contrast, in New Zealand some participants had praised me for celebrating women through the colour pink. In the United Kingdom and Italy, I presented the reactions of the United States and New Zealand audiences, and the participants discussed the link between colour, gender and culture, with some participants siding with the ‘USA’ interpretation and some others siding with the ‘New Zealand’ interpretation.

Naturally, these observations are anecdotal, and cannot be generalised to every participant from New Zealand, United States, United Kingdom or Italy. Nevertheless, these observations highlight two important points. On the one hand, these observations support the idea that participants used their entrance narratives (see chapter 2, p. 32) to make sense of their experiences, thus reinforcing the need to explore the participants’ entrance narrative before presenting any content related to an exhibit. On the other hand, these observations highlight how the performance was able to adapt to different cultural contexts thanks to its focus on the participants: the interpretation of the exhibits was not locked into a pre-scripted narrative, but open to the participants’ backgrounds and critiques. However, these different – because adapted – performances did not generate contrasting experiences of the performance, and in chapter 5 I present how the participants had comparable and consistent experiences of the performance.



### 4.3 Participants

My performance cannot exist without participants. Participants are not spectators for whom I perform; participants are the people with whom I perform. I have recruited participants for my performance through two main strategies: a web site (<http://diysciencemuseum.weebly.com>) (see Figure 16), and snowball technique (Hennink, Hutter, and Bailey 2010, 100).

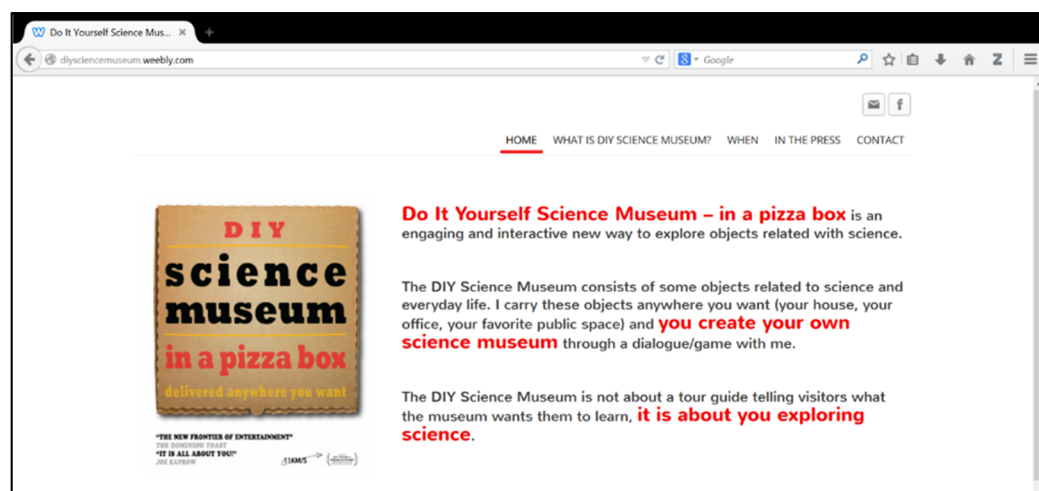


Figure 16: Screenshot of the web site of the performance

Through the first strategy, the web site, Alpha Art Studio contacted me. Alpha Art Studio “provides support for people with intellectual disabilities who wish to develop their artistic skills and be practicing artists” (Alpha Art Studio 2014). This contact allowed me the possibility of exploring my research in a unique context and with unique participants (more on this later on). Unfortunately, the web site in itself was not an effective way to recruit participants: between October 2013 and October 2014, the web site had 243 users with only one user, Alpha Art Studio, asking to participate in my research.<sup>72</sup> Nevertheless, the web site worked as an information point, and two types of people consulted it. First, people that participated in my performance and wanted more information about it after the performance. Second, people whose institutions decided to offer my performance to their staff (for example: Royal Society of New Zealand,

<sup>72</sup> Data from Google Analytics.

NIWA – the National Institute of Water and Atmospheric Research, Museum of New Zealand Te Papa Tongarewa, etc.). These people were looking for information about the performance before taking part in it. I detected these two uses, pre- and post-performance, monitoring the web site accesses before and after each performance.

The second strategy, snowball, was the most effective strategy to recruit participants, also because my supervisors introduced me to their networks, thus substantially expanding my pool of potential participants. Particularly, one of my supervisors used social media to present my performance to some of his friends. This provided me with two things: a description of my research from someone else's perspective, and some rudimentary feedback (see Figure 17).



Figure 17: Screenshot of the electronic dialogue between my supervisor and his friends

The description of my research from my supervisor's point of view provided me with an external, short and non-academic description of my work. While this description reflected my writings and my conversations with the supervisor, his external point of view gave me a fresh look at my work. Furthermore, this description helped me in presenting my performance to potential participants in a short, clear way, as I used it to shape my own non-academic description of the performance. Finally, but on a different note, the simple feedback that two participants wrote was important because it occurred during phase 1 of my experimentation, when I was still defining my performance. Discovering that my participants were enjoying the performance improved my morale and fostered the transition between phase 1 and phase 2 of my experimentation. The

participants, then, were not just necessary for the execution of my performance: they were also instrumental in developing my research.

In the first part of this section, I discuss the roles that the participants play during the performance. After that, I describe how the number of participants influences the experience of the performance. Finally, I conclude by presenting my attempts in reaching an audience of non-museumgoers.

### **Spectators and participants**

People who go to a museum are called visitors.<sup>73</sup> By extension, people who take part in a museum guided tour are visitors. However, even if guided tours have inspired my performance, I define the people that take part in my performances as participants. I use this word because there is a difference between the usual role that people have in guided tours, and the role that people play during my performances. During a guided tour, people have limited agency (see chapter 3), while, during my performance, people actively shape their experiences.

According to Grotowski, a single spectator is the minimum condition – together with one actor – to have a theatrical event. As Grotowski says: “Can the theatre exist without an audience? At least one spectator is needed to make it a performance” (Grotowski, 2002, p. 32). This distinction between actor and spectator is a distinction between who does an action, and who looks at an action. This distinction does not sit well with my aim of creating an engaging performance, because to speak about engagement I do not consider it enough to have a contemplative audience. What I try to have are participants: people that “may also be choosing to alter the work—its object, its subject, its meaning” (Kelley 2003, xviii) (see also my discussion on participation, p. 45). To foster participation, I have decided to follow Kaprow’s suggestion, and to eliminate the spectators: “[...] *audiences should be eliminated entirely*. All the elements – people, space, the particular materials and character of the environment, time – can in this way

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<sup>73</sup> Proof of this is the fact that visitor studies is the academic field devoted to research of the visitors’ behaviour inside cultural institutions.

be integrated.” (Kaprow 1966, 195).<sup>74</sup> Hence, the idea is to eliminate the spectator’s role from the structure of my performance while fostering participation.

However, I am not interested in forcing everyone to participate. What I would like is spontaneous participation, and to achieve this all I could do is create the favourable conditions for spectators to decide to participate. These favourable conditions are particularly important during the second step of my communication model: the participants’ entrance narratives (see Figure 13, p. 133). During this step, people who are taking part in my performance are supposed to share their personal experiences and knowledge about the exhibits. This is a delicate moment, in which either people start to participate, or people stay spectators.

I use three strategies to create the favourable conditions that could foster participation. First, I present my performance as a participatory activity, not as a theatre event. Thus, I try to avoid my participants thinking they are spectators by suggesting that they are participants. Specifically, I propose that they are participants in an experiment that to succeed needs their contributions, hence suggesting to them that their active participation is needed and welcomed. Second, after asking a question I listen to everyone, accepting each answer as right. Furthermore, I invite people to guess when they have no idea, transforming a potentially scholastic interrogation into a game. Third, I make sure that everyone has a chance to speak. This is a complex task, because on the one hand I want to give everyone space, but on the other hand I do not want to pressure anyone to speak. I try to accomplish this by looking at each one of my participants after posing a question, while at the same time stating that not everyone has to speak: it is an occasion, not a prescription. These strategies are usually successful in transforming potential spectators into participants (at least from my point of view; I discuss the participants’ point of view on my performance in the next chapter).

Nevertheless, it is important to note that participation is not something that happens continuously. Who takes part in my performances oscillates between spectatorship and participation, and it is on me to constantly provide occasions for participation. From this point of view, even if I participate in the performance, I am not just a participant. My role varies between participant and performer according to the situation. This double role is rooted, on the one hand, in the responsibilities that I have

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<sup>74</sup> Emphasis in the original.

as the participants' 'tour guide' (see chapter 3, p. 103), and on the other hand in the privileged knowledge that I have of the structure of the performance. In Foucault's terms, power and knowledge are inextricably linked (Foucault 1977): my power position during the performance is also a consequence of my knowledge of the structure of the performance.<sup>75</sup> Thus, even if I try to create a democratic space, I am aware of the limitations of my attempts.

### **One participant, many participants**

One aim of my research was to explore whether presenting science in a one-on-one, outside the museum setting was an effective way to communicate science (see my research questions, p. 67). In the same way, through my research I wanted to explore the effectiveness of a one-to-many situation outside the museum. As I have stated in the introduction of this chapter, over the course of my research I have performed in one-on-one and one-to-many situations, outside and inside museums. The number of participants and the different locations had influenced the development of the performance in specific ways.

The one-on-one and the one-to-many performances are two different types of experiences. The one-on-one performances are intimate experiences, in addition because these performances usually happen in the participant's home. This situation – one participant, in her home – was my theoretical optimum. Before starting my experimentation, I considered that to foster a dialogue in a one-on-one situation would have been reasonably easy, as two people are a natural foundation for a dialogue. Furthermore, being inside the participant's home, the power relation between her and myself as performer was different from a typical live performance situation. Usually, the spectator is the one going to the place in which the performance happens: the spectator is the guest. In my experimentation, I would have been the guest in the participant's home. This different setting should have represented also a reverse situation from a museum setting: the visitor stayed at home while the exhibition travelled to her. The performance/exhibition would have entered then the participant's

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<sup>75</sup> On the tension between dialogue among equals and power see also Luise J. Phillips (Phillips 2011, 87)

home in the same way in which usually the spectator/visitor enters the theatre/museum. During my experimentation, this inversion of roles is not just symbolic: the performance goes to the participant to listen to her and to be shaped by her.

As I was hoping when planning my research, this one-on-one situation is effective in engaging the participant and in communicating science. Being alone with the performer in her home, the participant has the chance to freely ask questions and to explore whatever exhibit she wants. As I adapt the performance for each participant, each single participant had a tailor-made experience in which her entrance narratives are integrated through improvisation in the performance. Together with the participant, I discuss the participant's ideas and experiences of science while presenting the participant with new ideas and different points of view about science. Furthermore, with a single participant there is no danger of someone monopolising the conversation: the participant has my undivided attention and the *Science Museum in a Pizza Box* becomes her museum. Finally, while the home setting is effective in creating an intimate performance, also spaces like offices and cafes work as settings for one-on-one performances. The key element in one-on-one performances, then, is the relationship between participant and performer, and this relationship is achievable outside the participant's home too. However, through experimentation, I discovered that the one-on-one performance is not the best possible situation for my performance.

The best possible situation for my performance is a group of five to six friends. To understand why this is the case, it is relevant to present the different possibilities in the one-to-many performance. In the one-to-many performances, the number of participants shapes the experiences.

Two participants is a delicate situation that I do not usually enjoy. With only two participants, the performance tends to lose dynamic while flattening itself against a scheme of polite talking turns. Furthermore, if the two participants are emotionally involved with each other (i.e. girlfriend/boyfriend), the performance can turn into something closer to a couple therapy session than to a performance, with the participants using the performance to discuss their personal lives (this happened three times during the experimentation).

Between three and seven participants, the performance works well. While, during one-on-one performances, I am responsible to provide as many different points of view as possible to enrich the participant's experience, in multi-participants performances the variety of opinions is provided directly by the participants. Moreover,

these performances work well also as an occasion for the participants to meet new people and share ideas. A good example of this type of performance is the performance that I did for the Porirua (Cannons Creek) Library. Photos and participants' comments on this performance have been shared on the Library's Facebook account (see Figure 18).



Figure 18: Screenshot of the Porirua (Cannons Creek) Library post on Facebook

Even if these comments have an anecdotal nature, I consider them useful in giving a first idea of the reception of the performance. It is also interesting to know that these comments were prompted by the librarian after the end of the performance, and not by me. The last comment is particularly well articulated:

What a fabulous opportunity to interact with different people, to have lots of laughs, to hear interesting stories, to tie science into everyday life, to question the accuracy of scientific news in the media! An interesting, stimulating and entertaining event 😊

This comment highlights, on the one hand, the participatory nature of the performance ("opportunity to interact with different people, [...] to hear interesting stories"), while on the other hand it acknowledges the link between the performance, science and everyday life ("to tie science into everyday life, to question the accuracy of scientific news in the media"). Finally, the sentence "to have lots of laughs" resonates with my

aim to entertain the participants. The post ends with an invitation to perform again at the same library, and I consider this invitation an indication of the satisfaction of both the librarian and the participants.

With more than seven participants, the performance has two main issues: time and space. First, there is no time to adequately explore everyone's point of view. Second, it is not easy to accommodate all the participants around a table in a way that allows the participants to still have full access to the exhibits. In other words, more participants means a bigger table: the bigger the table is, the bigger the distance between the participants and the exhibits becomes. In addition, the bigger the group, the more I have to coordinate the participants, making sure that no one is monopolising the dialogue, and thus adopting a leading role to prevent the structure of the performance dissolving into chaos. This leading role reinforces my privileged power position, further reducing the democratic space of the performance. However, these issues with numerous participants should not have surprised me, as similar issues are reported in guided tours (Tsybulskaya and Camhi 2009, 96) (see also the discussion on group dimensions in chapter 3, p. 94). Nevertheless, regardless of the dimensions of the group, the place in which the performance happens did not seem to be a determinant. I have performed with more than seven participants in museums settings and meeting rooms, and the dynamic of the performances was the same.

The best possible situation for my performance is a group of five or six friends because this situation has all the positive elements of the other situations. Being friends, the participants already know each other and thus are usually relaxed in their interaction. I could say the same for a performance with two participants, but while the two-participants-performance loses dynamic, the group-of-friends-performance has enough different voices to maintain a lively dialogue. Furthermore, the performance provides opportunities to know aspects of the other participants that may surprise. From this point of view, the group-of-friends-performance works as well as the group-of-strangers-performance, but there is a different pleasure to be had in discovering a friend's previously unknown opinions than that experienced when listening to a stranger suggesting surprising ideas. The participants look at their friend with new eyes, often openly commenting on their surprise in discovering a new side of their friend. Finally, while the one-on-one performance offers to the participant an occasion to explore only her opinions on science, the group-of-friends-performance offers the same



opportunity but as a collective experience.<sup>76</sup> The richness of this collective experience compensates for, and exceeds, the in-depth exploration of one's own opinions.

In conclusion, the participants' experiences are linked with the number of the participants. A single participant or a group of three to seven participants provide situations in which the performances work in engaging the participants and thus in communicating science. A group of two, or more than seven participants pose difficult situations, in which the strategies that I adopt during the performance are not always adequate to foster the right conditions to promote participation and engagement.

### **Straining to reach the under-represented**

One of the aims of my research is to explore whether my performance is successful in reaching people that do not usually go to museum. To define these people, it is easier first to identify the people who usually go to museums. According to Black:

[...] the most striking evidence from visitor surveys, revealed by any analysis of adult museum visitors, is that the largest group and the most over-represented in comparison to their percentage within the general population, consists of the better educated, more affluent, white professional classes [...] with education the most important factor. (G. Black 2012, 22)

Museum-goers are typically, then, well-educated people. From this point of view, my choice of using the snowball technique to recruit participants may have not been the best choice to reach non-museum-goers.

Snowball technique works through word of mouth, and thus tends to reach people with similar characteristics and from a similar background (Hennink, Hutter, and Bailey 2010, 101). My starting point in the recruitment process was my university, because as an international student the university was my first place for starting to build

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<sup>76</sup> This idea resonates with findings in visitor studies: "There is the general recognition among museum practitioners that museum use is a social experience. A large proportion of visitors come in pairs or in small groups, and for these visitors, interaction with their companions is an important aspect of their museums experience" (Coffee 2007, 377).

a social network. To my network, I added my supervisors' networks, but these additions did not change the background of my participants much, as my supervisors work in the university and naturally know many people linked with academia. Both my network and my supervisors' networks then mainly constitute people that gravitate towards the university, and thus people whose background is likely to include tertiary education. Furthermore, it is important to note that only people who are already interested take part in voluntary surveys; this phenomenon is called "selection bias" (Goldacre 2008, 267). Even if my performance is not a survey, it would be naïve to think that my performance has been immune to the "selection bias" effect. Thus, my participants are probably the people most interested in science and museums within a pool of people with tertiary education. From this point of view, it is fair to say that my performance has not succeeded in reaching many non-museum-goers. A first evaluation would suggest that something around 75 per cent of my participants had some previous experience with museums.

However, when I started to realise during my experimentation that I was not able to reach a more diverse audience, I tried to actively recruit two specific groups of society: senior citizens and lower socio-economic groups. I focused on these two groups of society for different reasons. I focused on senior citizens because I was hoping to reach a different demographic segment from the one represented by my typical participant. I focused on lower socio-economic groups because they are among the most under-represented audiences at museums (G. Black 2012, 25).

To recruit senior citizens, I contacted retirement homes. Typically, I went directly to the facilities and tried to speak with someone to whom I could present my research, without any previous appointment. This first move usually granted me the email address of a person in charge. Then, I sent a series of emails: to present my research to the person in charge, to produce my credentials and to establish my credibility. At this point, two things could happen: I could receive a final email thanking me and explaining that my research was not fit for that retirement home, or I could get an appointment to discuss the viability of my performance. I contacted four retirement homes over a period of four months, and I achieved one appointment. This appointment led to a performance with five participants.

To recruit lower socio-economic groups, I contacted humanitarian associations, and I followed a similar procedure to the one I have explained for senior citizens. Again,

I contacted four associations, and three of them explained to me how the people they assisted had more important issues in their lives than taking part in academic research about science communication, like feeding and clothing their children. However, one association that works with a stronger focus on community engagement agreed to organise a performance in their institution. Despite the local promotion, no one turned up for the performance. Also, a second performance, organised in the same place and with even more promotion, was deserted. I made a last attempt to reach lower socio-economic groups through a local library. I selected a part of the Wellington region characterised by a lower socio-economic population. Then, thanks to one of my supervisors' help, I organised one performance in the local library of this part of the Wellington region. The performance had four participants. However, the participants' profile was closer to a museum-goer than to a non-museum-goer (see also the photographs of this performance in Figure 18, p. 147).

Despite my attempts, I was then unable to reach lower socio-economic groups. A first explanation for this fact is that, being an international student, I lack connections and authority to fully involve humanitarian associations in the promotion of my research. Another explanation is that people from lower socio-economic groups have more important issues to solve in their everyday lives, and/or they have no interest in taking part in my research, possibly because they do not think it is relevant for them.

Nevertheless, through the web-site of the performance (see Figure 16, p. 141), I was able to recruit one of the under-represented audiences at museum: people with different abilities (G. Black 2012, 25). One of the facilitators of Alpha Art Studio contacted me through the web site (see p. 141), and after a couple of meetings we were able to organise four performances for the people frequenting the Studio. A total of 23 participants took part in these performances. Performing with people with different abilities was a unique experience. The structure of the performance stayed basically the same, but instead of presenting four objects, I presented all seven. This choice was prompted by the shorter amount of time that was devoted to the discussion of each object. Also, my role during the performance tended towards leadership, as the dialogue among my participants sometimes slipped into chaos. However, I received some of the best reactions to the exhibits from these participants. In particular, the 'glowing-stick' and the 'rabbit/duck' exhibits caught the participants' attention. The glowing stick, thanks to its glowing characteristic, delighted the participants, especially when the

lights were switched off. The rabbit/duck was interpreted in more ways than the usual rabbit-or-duck, and the participants saw in it a key, a tooth, a key holder, and so on. Finally, the performance was able to hold most of the participants' attention for almost one hour: a considerable length of time for people with different abilities, according to the facilitators of the Studio.

Research in visitor studies suggests that the characteristics museum non-visitors value most highly are: "being with people, participating actively, and feeling comfortable and at ease" (G. Black 2012, 26). While I feel that my performance has these characteristics, I am not sure that I have been able to reach a significant number of "museum non-visitors" through my performance. I can attribute this lack of "museum non-visitors" to the technique that I have used to recruit participants (snowball). This technique has mainly targeted people that already had an interest in museums. In addition, my direct attempts in contacting "museum non-visitors" produced poor results. From this point of view, I am inclined to think that my performance, despite my efforts in creating a popular entertainment linked with everyday reality, is not appealing to everyone. Finally, I wonder whether promoting my performance for a longer period of time could have extended the demographics of my participants.

## ***Conclusion***

Describing a performance is a formidable task, as “no performance is ever the same as any other” (George 1996, 19). Any performance changes in time, and my performance is no exception. Furthermore, both processes of creating a performance and of performing a performance are chaotic. From this point of view, writing is not necessarily the best tool to reproduce these processes. In particular, a thesis has to present events in a linear way to prove its arguments. Writing a thesis about a performance is then an exercise in translation, and like any translation, it involves creativity and selections. What looks linear has been chaotic, circular and fragmented. However, I hope that through this chapter I have been able to present a coherent reconstruction of the creation and experimentation of the performance.

Performing the performance of writing a thesis about my performance has led me to realise that there are two concepts that keep resurfacing in my research. These two concepts are multiplicity and loss of control. These two concepts are intertwined: I can have multiplicity only if I accept losing control over my performance. I consider multiplicity a positive feature, because even if it is difficult to deal with different opinions, the absence of different opinions is tyranny. Thus, to have multiplicity, I lose control over my performance. This loss of control is not complete: the structure of my performance is a robust container. However, I am not always sure of what is happening inside this container. This lack of control over the contents of my performance is consistent with my attempts of promoting a Bohmian dialogue (see chapter 2, p. 60). A Bohmian dialogue has no agenda: the participants decide what to discuss (Bohm 2013). A Bohmian dialogue creates knowledge; it does not transmit knowledge. If a dialogue on science has an agenda, than it is not a dialogue, but a disguised vertical communication (see also my discussion on the deficit model in science communication, p. 57).

From the point of view of a museum, the lack of control over the contents that my research suggests could be problematic. By adopting a model of communication that fosters dialogue on an exhibit (see Figure 13, p. 133), a museum could lose control over the content of an exhibition. However, this loss of control is two-fold. On the one

hand, it could mean that opinions not usually endorsed by the museum become visible. On the other hand, it could mean that the museum, instead of being a place in which some selected opinions are presented, could become a place in which new knowledge is generated (see p. 59).

Nonetheless, I also think it is important to remember that visitors are different, and different visitors look for different experiences. Some visitors – probably the ones that are already visiting museums – may want to have exhibitions that present clear interpretations. Museums, then, could opt to present their exhibits through different approaches, in order to meet the needs of different visitors.

## 5. Participants' experiences of the performance: qualitative analysis

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## ***Introduction***

The primary question that this study aims to answer is: “How can a guided tour be an engaging and effective way to communicate with visitors about science?” To answer this question, in chapter 2 and 3, I have explored what a guided tour is, through literature review and interviews with tour guides respectively. These explorations have suggested a hypothesis: a guided tour can be an engaging and effective way to communicate science if a guided tour is an entertaining performance. To test this hypothesis, I have created such a performance: the *Science Museum in a Pizza Box*. Specifically, the aim of the *Science Museum in a Pizza Box* is to communicate science from a critical perspective while entertaining its participants. I have described and analysed this performance in chapter 4. In this chapter, I evaluate whether the hypothesis that I have experimented with the *Science Museum in a Pizza Box* is a successful option in answering my research questions.

The evaluation that I present in this chapter is based on qualitative analysis. This qualitative analysis develops from the participants’ experiences of the performance. Specifically, I investigate the participants’ emotional and cognitive journeys during the performance. Furthermore, I compare and contrast the participants’ experiences of the performance with the participants’ recollections and notions of museum guided tours. This analysis is based on four things: the word association game that I did at the beginning and at the end of each performance (see Figure 5, p. 112), and three questions that I asked at the end of each performance (1- Was this performance entertaining? Why? 2- Which part of this performance did you like more/less? 3- Do you go to museums? If yes, is this performance different from a guided tour? How?).

I carried out the qualitative analysis that I present in this chapter on a sample of the performances. In total, I did 52 performances in the course of my research, during a period of approximately one year and three months (from 19 September 2013 to 30 December 2014). Not all these 52 performances were recorded, and not all the recorded performances provided usable recordings. Theoretically, I recorded each performance through two devices. The first device was a portable video camera, the second device



was an audio recorder. The video camera was intended to record the whole performance, while the audio recorder was intended to record only the three questions that I asked at the end of the performance. This system should have provided me with a double set of recordings of the final questions. However, I encountered a few technical issues, the most prominent being that sometimes the background noise made the participants' voices unintelligible on both devices. Also, and from a less technical point of view, I was not always in the position of recording the performance. Usually, I did not record a performance for two reasons. First, when I thought that recording was inappropriate (for example, when performing for the person responsible for an institution that was considering presenting my performance to its audience, see chapter 4 for more information, p. 136). Second, when one of the participants asked me not to record (this happened once). In conclusion, out of the 52 performances, I had 35 recorded performances that I could analyse. Out of these 35 performances, I sampled 14 performances for my qualitative analysis. In the following table (Table 6), I present the three sets of performances (all the performances, recorded performances, sampled performances) highlighting some of the basic characteristics of each set.

SCIENCE MUSEUM IN A PIZZA BOX - PERFORMANCES: TOTAL / RECORDED / SAMPLED					
Total number of performances		52	Number of <b>recorded</b> performances		35
Number of participants		260	Number of participants		209
Number of female participants		153	Number of female participants		126
Number of <b>sampled</b> performances		14	Number of participants		81
			Number of female participants		46
Performances per Country			Performances per Country		
New Zealand		29	New Zealand		23
USA		2	USA		0
UK		10	UK		7
Italy		11	Italy		5
Performances grouped per n. of participants			Performances grouped per n. of participants		
n. participants		n. performances	n. participants		n. performances
1		10	1		3
2		6	2		5
3		2	3		1
4		8	4		7
5		5	5		4
6		2	6		1
7		3	7		3
8		9	8		4
9		3	9		3
10		3	10		3
>10		1	>10		1
Performances grouped per location			Performances grouped per location		
private house / office		24	private house / office		15
public space / institution		28	public space / institution		20
Performances grouped per location			Performances grouped per location		
private house / office		7	private house / office		7
public space / institution		7	public space / institution		7

Table 6: A basic characteristic comparison of the three sets of performances (all the performances, recorded performances, sampled performances)

To select the 14 performances that constitute my sample, I used purposeful sampling (Patton 2002, 230). Purposeful sampling uses as its main criterion for selection the concept of information rich cases: “information rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry” (Patton 2002, 230). Specifically, I used two strategies to *purposefully* select my cases. The first strategy is what Patton defines as “maximum variation sampling” (Patton 2002, 234). This strategy “aims at capturing and describing the central themes that cut across a great deal of variation” (Patton 2002, 234). I chose this strategy because each performance is different: not only because every performance is a unique live event (McGrath 1996, 5; Schechner 2002, 23), but also because each execution of my performance – being based on the participants’ choices – presents a unique sequence of exhibits. Furthermore, during my experimentation I have used different sets of exhibits (see p. 129 and p. 136), performed in three countries (New Zealand, United Kingdom, Italy),<sup>77</sup> and used two languages (English and Italian). Thus, a reasonable way to analyse such a different collection of performances is to maximize the sample variation. To achieve maximum variation in my sample, I divided the 35 recorded performances into groups that were equivalent in key characteristics: number of participants, setting, language, country, phase to which the performance belonged to.

The second strategy that I used in selecting cases is what Patton defines as “intensity sampling” (Patton 2002, 234). Intensity sampling is based on “information-rich cases that manifest the phenomenon of interest intensely [...]. Using the logic of intensity sampling, one seeks excellent or rich examples of the phenomenon of interest” (Patton 2002, 234). I used this sampling strategy in two ways. First, I used intensity sampling to decide which performance to select when presented with a group of performances that had similar characteristics. In other words, after classifying the performances in groups that were as different as possible (maximum variation sampling), I picked only one performance for each group. To do this later selection, I used intensity sampling, thus generating a sample of 11 distinctive performances. The second way in which I used intensity sampling was to integrate this sample of 11 performances with other three information-rich cases. These three cases – even if similar to other performances in the number of participants, setting, phase etc. – are

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<sup>77</sup> The performances carried out in the United States were not recorded.

characterised by relevant and well-articulated answers to my questions, and thus provide my sample with critical data.<sup>78</sup>

In the following table (Table 7), I present the final 14 sampled performances, highlighting six characteristics. First, to which phase of experimentation a single performance belongs (first phase, second phase, overseas experience – see Figure 9, p. 127). Second, the codes that identify each performance; I use these codes when referring to the performances in the chapter, thus hopefully allowing my seven readers to check the specific type of performance to which the participants are referring to.<sup>79</sup> Third, the date of the performance. Fourth, I indicate if the performance happened in a private space (such as house or office) or public space (such as museum or public library). Fifth, I present the sequence of exhibits that constituted the performance. And finally, I present the number of participants who took part in the performance.

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<sup>78</sup> The three cases that I added after sampling using the maximum variation strategy are: LibraryNZ\_2, PrivateNZ\_Car and PrivateNZ\_Uni. The first case has characteristics similar to LibraryNZ\_1. The second and third cases have characteristics similar to PrivateNZ\_Lisb. However, as already stated, these three cases provide interesting and unique material in the context of my analysis. More information on these cases later.

<sup>79</sup> I created the codes in an attempt to make immediate the identification of some simple features of the performances. For example, “PrivateNZ\_An” refers to a performance done in a private space in New Zealand, while “MuseumITA” refers to a performance done in a museum in Italy. The first part of each code identifies the location (private, museum, library, school), while the second part of the code identifies the country in which the performance happened (New Zealand, United Kingdom, Italy). The third part of the code, when present, helps in identifying different performances that have similar characteristics (for example: PrivateNZ\_An / PrivateNZ\_Nat). Finally, the suffix “\_Pr” indicates that the participant(s) had a professional background in museology (PrivateNZ\_Wan\_Pr, MuseumUK\_2\_Pr).

	Code	Date	Place	Exhibits	Participants
First Phase	PrivateNZ_An	01-Oct-13	private space	sweetener	1
				glow stick	
				badge	
				sterile-pad	
	PrivateNZ_Nat	04-Oct-13	private space	glow stick	2
				deck-of-cards	
				sweetener	
				sheep-skull	
	MuseumNZ	23-Oct-13	public space	glow stick	7
				sheep-skull	
				deck-of-cards	
				rabbit/duck	
Second Phase	PrivateNZ_Wan_Pr	20-Nov-13	private space	sweetener	1
				Petri dish	
				glow stick	
				deck-of-cards	
	PrivateNZ_Lisb	30-Jan-14	private space	sweetener	5
				rabbit/duck	
				deck-of-cards	
				sheep-skull	
	LibrayNZ_1	13-Feb-14	public space	sheep-skull	4
				sweetener	
				rabbit/duck	
				deck-of-cards	
Overseas Experiences	LibrayNZ_2	27-Mar-14	public space	sheep-skull	4
				rabbit/duck	
				deck-of-cards	
				Petri dish	
	PrivateNZ_Car	29-Jul-14	private space	sheep-skull	7
				Petri dish	
				glow stick	
				deck-of-cards	
	PrivateNZ_Uni	22-Oct-14	private space	sweetener	5
				Petri dish	
				deck-of-cards	
				sheep-skull	
	MuseumUK_1	05-Dec-14	public space	maize	8
				deck-of-cards	
				sweetener	
	MuseumUK_2_Pr	10-Dec-14	public space	deck-of-cards	10
				maize	
				glow stick	
				rabbit/duck	
	MuseumITA	13-Dec-14	public space	sheep-skull	9
				glow stick	
				Petri dish	
				rabbit/duck	
	SchoolITA	16-Dec-14	public space	sheep-skull	8
				maize	
				duck-rabbit	
				Petri dish	
	PrivateITA_Sig	29-Dec-14	private space	glow stick	10
				maize	
				Petri dish	
				deck-of-cards	

Table 7: Sampled performances for the qualitative analysis (14 performances)

To analyse these 14 performances, I transcribed the word association games and the answers to the three final questions of each performance. Then, I coded (using NVIVO

software) these transcriptions according to the corresponding word association game or answer, thus grouping together all the answers to the same word association game or question. After that, I did a second coding, re-assigning some of the answers according to the content of the answers, as some participants did not necessary elaborate on a theme just after a specific question. In this chapter, I use these sets of answers to evaluate whether (and to what extent) the *Science Museum in the Pizza Box* represents an interesting answer to my research questions.

My analysis has two limitations. First, a limitation that is structural in non-probability sampling. Second, a limitation that is specific to my data collection. The first limitation can be describe as the fact that: “non-probability sampling can only be adequate if the researcher does not aim at generalizing his or her findings beyond the sample” (Gobo 2004, 439). This means that my findings refer only to my sample, and specifically to the analysed performances (I will come back to this point in my conclusion of this chapter).

The second limitation, linked with my data collection, is that I was the performer and the interviewer. In other words, I was the one asking questions about the performance that I had just performed. This idiosyncratic situation could have influenced the degree of freedom that participants felt while answering my questions, thus prompting the participants to give overly positive feedback.

The following chapter is divided into three sections. First, I present the word association games. In this section of the chapter, I discuss the participants’ perceptions about science and scientists before and after my performance, thus exploring whether my performance was able to influence the participants’ point of view on science/scientists.

Then, in the second section, I discuss whether the participants found my performance entertaining and then I describe two characteristics that are related within the participants’ discussion about what they liked (or disliked) in an exhibit.

Finally, in the third section, I compare my performance with the participants’ notions and experiences of museum guided tours.

## 5.1 Science and scientists: perceptions and word association games

In this first section of this chapter, I present the participants' answers to the word association games that the participants played at the beginning and at the end of the performance. In analysing these answers, I explore if and to what extent my performance had any influence on the participants' perceptions on science/scientists. There are three research questions that I am attempting answering here: 1) How can changes in perception be detected? 2) What is the participants' perception about science/scientists after my performance? 3) Do the participants' notice a change in their perceptions?

The strategy that I have used to try to evaluate the changes in the participants' perceptions (question 1) is based on the comparison between word association games. This strategy is inspired by the research of Falk et al. and Tsybulskaya et al. (Falk, Moussouri, and Coulson 1998; Tsybulskaya and Camhi 2009). Both these researchers tried to evaluate the impact of a museum experience on the visitors, and for this reason they seemed a reasonable starting point for my research. Falk et al. focused on the effect of an exhibition, while Tsybulskaya et al. worked on the effect of a guided tour. These researchers used a similar tool (Personal Meaning Mapping (Falk, Moussouri, and Coulson 1998, 109), or EN mapping (Tsybulskaya and Camhi 2009, 83)) to map the visitors' entrance narratives (see chapter 2 for more information about entrance narratives, p. 32). This research tool can be described as a piece of paper that has in its centre the main concept of the museum experience, and around which visitors could freely write thoughts that they consider relevant. Falk et al. used this tool twice, at the beginning and at the end of the visitors' experience, while Tsybulskaya et al. used it only at the beginning, administering a questionnaire at the end of the tours. However, this tool did not fit my research, as each visitor works separately on it, while I wanted to foster dialogue from the very beginning of my performance. For this reason, I decided that a word association game that involved every participant at the same time could work better in the context of my research. A word association game has metaphorically in its centre a concept, and, starting from that concept, participants can suggest any word they associate with it. Furthermore, a word association game has a

ludic dimension that invites participation. From this point of view, a word association game provides the researcher with a manageable set of data, while going in the direction of qualitative methods of research that try to give more agency to the participants than to the interviewers (Gauntlett 2007): an important aim in my research, given that my performance is based on participation. The limit of a word association game is that it does not provide the researcher with articulate answers, and thus using a word association game can somehow limit the depth of the analysis. However, I think that in the context of my research a double set of word association games (before and after the performance) represents a reasonable strategy to evaluate to what extent my performance is capable of influencing the participants' perceptions on science/scientists.

During the word association games, the participants were asked: "What word do you associate with science? What word do you associate with scientists?" I analysed the participants' replies to explore possible answers to my second and third research questions (2- What are the participants' perceptions about science/scientists after my performance? 3- Do the participants notice a change in their perceptions?). It is important to note that participants of the same performance sometimes seem to show opposite reactions to the performance, and in the following pages I describe and discuss this fractured landscape. This fact (same performance, different interpretations) can be linked with the idea that each museum visitor comes to a museum with a different set of background and experiences that are key to the relationship between the visitors and the exhibits (Doering 1999; Tsybulskaya and Camhi 2009). It is also useful to know that not all the participants took part in the games, and not all the participants that took part in the games said something in each of the four parts of the game (word association with science at the beginning, word association with scientists at the beginning, word association with science at the end, word association with scientists at the end). Moreover, immediately after the performance may be too soon to evaluate its full impact, which likely happens over time as people remember the performance and link it to other experiences and information.<sup>80</sup>

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<sup>80</sup> "The meanings people make about their museum experience also extend beyond the temporal and spatial boundaries of the museum [...]. It can take days, sometimes even weeks for a memory to form,

### Impact of the performance and effectiveness of the research strategy

To be able to use the results of the word association games as a tool in my analysis, I need to establish two points. First, I need to determine whether the performance had any impact on the participants' perceptions of science/scientists. Second, I need to establish whether this impact (if present) could be described comparing the word association games before and after the performance. To achieve this aims, I consider two performances.

The first performance is MuseumITA. In the following table, I present the words that the participants associated with science and scientists (Table 8).<sup>81</sup>

BEFORE	AFTER
<i>(science)</i>	<i>(science)</i>
Tecnica {technic}	Michele
Tecnologia {technology}	Multinazionali {international corporations}
Leonardo Da Vinci	Ricerca {research}
Innovazione {innovation}	Donne {women}
Chimica {chemistry}	Osservazione {observation}
Futuro {future}	Studio {study}
Fisica {physic}	Esperimenti {experiments}
Ricerca {research}	Pecora {sheep}
<i>(scientists)</i>	<i>(scientists)</i>
Studiosi {people that study}	Margherita Hack {female Italian astrophysicist}
Laureati {people with degrees}	Agar-agar
Laboratorio {laboratory}	Conoscitori {people that know}
Ricercatori {researchers}	Elaboratori di dati {people that compute}
Camicie bianco {white coat}	Laboratori {laboratories}
Esplosioni {explosions}	Confusione {confusion}
Intuizione {intuition}	
<b>MuseumITA</b>	

Table 8: Word association before and after the MuseumITA performance

and during that time other intervening experiences and events can influence those memories” (Falk 2012, 318).

<sup>81</sup> In the left column of the table, there are the associations before the performance, in the right column there are the associations after the performance; in the top of the table there are the words associated with science; in the bottom of the table there are the words associated with scientists; in angle brackets – when needed – are the English translations.



One of the exhibits selected during this performance was the Petri dish. This exhibit is a possible starting point for a dialogue on gender and science. During this performance (MuseumITA), the participants took the opportunity to explore at length the subject of gender in science, passionately discussing contrasting perceptions on the subject. The words “donne {women} / Margherita Hack {a female Italian astrophysicist} / agar-agar<sup>82</sup>” could then be seen as linked with that discussion, thus suggesting the hypothesis that the dialogue, provoked by one exhibit, was significant enough to be remembered by the participants at the end of the performance.

On the other hand, the word “pecora {sheep}” is a direct reference to the sheep-skull exhibit. This reference suggests that that specific exhibit captured the attention of at least one participant, and that participant – after the performance – linked the content of the exhibit with the idea of science.

Overall, the associations in Table 8 suggest two observations: first, the associations after the performance are almost completely different from the associations before the performance; second, the participants remembered dialogues and exhibits from the performance. These observations indicate that after the performance the participants associated the words science/scientists with ideas that are different from the participants’ ideas before the performance. Furthermore, at least a portion of these changes in associations appears to be directly linked with what happened during the performance.

These observations can be extended to other performances. For example, the MuseumUK\_2\_Pr performance (Table 9).

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<sup>82</sup> Agar-agar is the nutrients substratum used worldwide in Petri-dishes to cultivate microorganisms. The use of agar-agar was suggested by Fanny Hesse to her husband, a German microbiologist. The story of Fanny Hesse and the use of agar-agar is discussed in relation to the exhibit.

BEFORE	AFTER
<i>(science)</i>	<i>(science)</i>
Museum Experiment Laboratory Hypothesis Writing Specimen White coat	Glow sticks Rabbit/duck Thinking Discussing Debating Uncertainty
<i>(scientists)</i>	<i>(scientists)</i>
White head People Frankenstein Goggles Clip board Test tube Time	Frauds Balance between objectivity and subjectivity
<b>MuseumUK_2_Pr</b>	

Table 9: Word association before and after the MuseumUK\_2\_Pr performance

This performance presents similar patterns of references to MuseumITA: there are references to a dialogue and references to some specific exhibits. A recurring point of dialogue during the MuseumUK\_2\_Pr performance was the discussion of what is objective and what is subjective. The echo of this intense dialogue could be probably seen in the words “thinking / discussing / debating / balance between objectivity and subjectivity.” On the contrary, “Glow sticks / Rabbit/duck” are direct references to two of the exhibits that were selected during the performance. Also, the associations after the performance are completely different from the associations before the performance.

Significantly, similar patterns in references are found in two different performances: MuseumITA was a performance done in Italian for the general audience of an Italian institution, while MuseumUK\_2\_Pr was a performance done in English for an audience of museum professionals. Furthermore, similar references are found in other performances (more examples in the following pages).

In conclusion, despite differences in participants’ backgrounds and cultures, similar trends can be found in different performances. First, after the performance the words that the participants’ associated with science/scientists are usually different from the words that the participants’ associated with science/scientists before the performance.

Moreover, some of the associations after the performance are direct references to what happened during the performance. I can then suggest that: first, the performance had an impact on the participants' perceptions on science/scientists; second, comparing word association games is an effective strategy to record these changes in participants' perceptions.

### Changes in participants' perceptions after the performance

Having established that the comparison between word association games is an effective strategy to record changes in the participants' perceptions on science/scientists, and that these changes are linked with the performance, I now explore whether these changes follow common patterns. To achieve this aim, I start discussing three performances that intensely present changes in word associations. These performances are PrivateNZ\_Lisb, MuseumNZ and MuseumUK\_1.

In the first performance, PrivateNZ\_Lisb, changes are evident in the word associations with scientists (Table 10).

BEFORE	AFTER
<i>(science)</i>	<i>(science)</i>
Spaceships Electricity Mathematics Anything Physic Cosmology	Ideas Questions Everything Looking for truth
<i>(scientists)</i>	<i>(scientists)</i>
Research Test tubes Weatherman Einstein	Not so clever anymore They don't know everything
<b>PrivateNZ_Lisb</b>	

Table 10: Word association before and after the PrivateNZ\_Lisb performance

The associations with science before the performance are mainly scientific disciplines and scientific phenomena. The associations with science after are not so different, with the word “everything” mirroring the word “anything”. However, the associations with scientists show a different pattern. The associations before the performance are a mix

between scientific icons (“Weatherman / Einstein”), and something that scientists do or use (“Research / Test tubes”). The first association after the performance is “Not so clever anymore”, and the participants welcomed this association with a burst of laughter, followed by the comment: “they don’t know everything”. The use of the adverb “anymore” seems to indicate that the participant changed her/his mind: s/he thought scientists were clever before the performance, but then s/he had a different opinion. The laughter, the subsequent comment and the lack of any further associations from any other participant appear to indicate that the participants shared her/his opinion. The performance MuseumNZ shows similar patterns in the associations, even if in this performance, also, the associations with science appear to be different (Table 11).

<b>BEFORE</b>	<b>AFTER</b>
<i>(science)</i>	<i>(science)</i>
Research Experiment Rationality Exploration	Controversy Corrupt Interpretation Ideology Context
<i>(scientists)</i>	<i>(scientists)</i>
Mad Brainy Solving problems of the world	Human Sponsored
<b>MuseumNZ</b>	

Table 11: Word association before and after the MuseumNZ performance

In this performance (MuseumNZ), it is possible to see two different attitudes toward science/scientists before and after the performance. Before, the associations indicate a neutral/positive attitude (with possibly one exception: “mad”). After, the associations indicate a critical/negative attitude (with the most extreme case being the juxtaposition between “solving problems of the world” and “sponsored”). This trend – from neutral/positive associations to critical/negative associations – resonates with the previous transition from scientific icons to fallible beings, and finds further confirmation in the associations of the MuseumUK\_1 performance (Table 12).

BEFORE	AFTER
<i>(science)</i>	<i>(science)</i>
Interesting Knowledge Laboratory Intellectual Discovery Engineering	Manipulation Conversation Cynicism Doubt
<i>(scientists)</i>	<i>(scientists)</i>
Me Fatigue Meticulous Curiosity	Credible people People who are willing to accept bribes / only few of them / but somehow they are still credible, that's the paradox / they are just doing their job It's how it [science] is used – but this everywhere
<b>MuseumUK_1</b>	

Table 12: Word association before and after the MuseumUK\_1 performance

However, in this performance (MuseumUK\_1), the passage from a neutral/positive attitude to a critical/negative one is clearer in the words associated with science. On the contrary, the words associated with scientists show a complex panorama. This complex panorama can be linked with the presence of two scientists among the participants of this performance. The words that these two scientists associated with scientists before the performance were “me” and “fatigue”. After the performance, one of the two scientists commented on another participant’s association with scientists. A participant said: “people who are willing to accept bribes” and the scientist added: “only a few of them”. Then, two other participants chimed in saying: “but somehow they are still credible, that’s the paradox / they are just doing their job”.<sup>83</sup> The last association is: “it’s how it [science] is used – but this everywhere”. This sequence of associations and interactions shows that scientists are – after the performance – a subject of debate, while there is no indication of nuanced interpretations of scientists before the performance. From this point of view, I would suggest that the performance succeeded in facilitating a critical approach that is observable in the elaboration of the figure of the scientist.

<sup>83</sup> The comments of the two participants are separated by “/”.

Despite the differences among the performances (different set of exhibits, different sequence of exhibits, different country etc. – see Table 7 for further information, p. 160), these three performances (PrivateNZ\_Lisb, MuseumNZ, MuseumUK\_1) seem to present a common shift in some of the participants' perceptions: from a neutral/positive attitude to a critical/negative attitude. Furthermore, the same shift can be detected in the MuseumUK\_2\_Pr performance, where scientists after the performance were associated with “fraud” (see Table 9). A first conclusion that I can formulate from this data is that the performance is partially effective in achieving its aim (promoting a critical approach to science and scientists), as some of the participants' associations shifted toward a critical attitude.

Nevertheless, MuseumUK\_1 performance has highlighted how scientists might show a different pattern in their association before and after the performance. To further explore the hypothesis that the performance has a different – and maybe distinctive – impact on scientists, I discuss the PrivateNZ\_Nat performance (Table 13).

<b>BEFORE</b>	<b>AFTER</b>
<i>(science)</i>	<i>(science)</i>
Process of finding things out Experiments Physics, it's what I do Answering questions Curiosity	Same as beginning Physics
<i>(scientists)</i>	<i>(scientists)</i>
Us People Friends Reasoning	Physics Same as beginning
<b>PrivateNZ_Nat</b>	

*Table 13: Word association before and after the PrivateNZ\_Nat performance*

The aim of my performance is to encourage a reflection on the role and the function of science in contemporary society, and specifically to give insight into how science is socially constructed. This performance (PrivateNZ\_Nat) had two participants, both of them scientists. Possibly unsurprising, then, the associations with the word ‘scientists’ before the performance already suggest how these two scientists considered themselves as a part of the society (“us / people / friends” – these associations resonate with the scientist's association in MuseumUK\_1: “me”). Both the sets of associations with

science/scientists after the performance (PrivateNZ\_Nat) clearly show how these two participants did not change their perceptions on science/scientists. I can then suggest the idea that scientists, having a first-hand and possibly multifaceted experience of science/scientists, were less challenged in their perceptions by my performance. Nevertheless, a later comment from one of the participants indicates the possibility that the performance was effective in provoking this participant in thinking about science from a new perspective. The participant said:

But another thing that I liked about [that exhibit] was the discussion that we had about whether the science failed, or the communication failed and things like that ... I think it's interesting because that – unlike talking about fluorescence – is not in our everyday experience of thinking about science. That to me was quite interesting, just to kind of switch and think “what was the problem there?” And “why did it happen?” And with the big repercussions ... [...] and you kind of think, if you were in a case where you had to give evidence – that's unlikely for the type of research that we do – but, you know, it's a big responsibility, and to me that crime scientist just seemed really arrogant and, you know, wrong. Morally wrong. Irresponsible. PrivateNZ\_Nat

This comment implies that the performance was effective in encouraging a reflection on science/scientists, a reflection that caused one participant to think outside her/his “everyday experience of thinking about science.” Unfortunately, I do not think that the data support the idea that every participant who was a scientist had this same type of reflection.

In conclusion, the participants' perceptions on science/scientists before and after the performance show a common trend: from neutral/positive attitudes to critical/negative attitudes. This trend is consistent with the aim of the performance, thus suggesting the idea that the performance was effective in promoting a critical approach to science/scientists. However, this trend is limited to non-scientist participants, while scientists are possibly more likely to keep their perceptions unchanged. Finally, it is important to note that this is a general trend, and it does not imply that each participant had a change in her/his perceptions on science/scientists.

### Participants' awareness of their changes in perceptions

In the first part of this section, I have discussed whether the performance provoked a change in the participants' perceptions on science/scientists, and whether this change was detectable comparing word association games before and after the performance. In the second part of this section, I have analysed the participants' associations to explore whether there were discernible trends in the participants' associations. In this last part, starting from the idea that the performance had an impact on the participants, I discuss whether the participants themselves were aware of changes in their perceptions on science/scientists. This discussion is important because even if the participants did not change their perceptions on science/scientists, the process of reflecting on their own perceptions could have made the participants aware of their starting assumptions.

One performance that seems particularly relevant to explore this topic is PrivateNZ\_Car (Table 14).

BEFORE	AFTER
<i>(science)</i>	<i>(science)</i>
Facts Mystery Interesting questions Fossils School Grandpa Jim, he was a scientist Nature and also dusty books	Interesting, I've learnt a lot Curious Curiosity The unexpected Everything Links to everything
<i>(scientists)</i>	<i>(scientists)</i>
White coat Mad Boring Mr Kings, he was a science teacher Microscope, someone with a microscope Lots of details	Anyone Fallible Discoverers Part of the society I think we were going with stereotypes at the beginning with our answers, even though I was not necessarily thinking so much, just saying the first thing that comes to mind really, it is more interesting when you get the stories.
PrivateNZ_Car	

Table 14: Word association before and after the PrivateNZ\_Car performance

As reported on the table, at the end of the word association game one participants reflected that: "I think we were going with stereotypes at the beginning with our



answers, even though I was not necessarily thinking so much, just saying the first thing that comes to mind really, it is more interesting when you get the stories.” This comment is noteworthy, because it suggests that one participant had awareness of the different kind of associations that emerged at the end of the performance. Also, her/his reference to “stereotypes” is significant, as this reference resonates with associations in some pre-performance word association games. For example, the association ‘white coat’ is present in four performances (LibraryNZ\_1, PrivateNZ\_Car, MuseumITA, MuseumUK\_2\_Pr), while scientists are associated with the word ‘mad’ three times (PrivateNZ\_Car, MuseumNZ, PrivateITA). These stereotypes appear to be challenged by the end of the performance, when it is possible to find associations that refer to complexity and confusion: two concepts that can be seen as the opposite of a stereotype. For example: “Confusione {confusion}” MuseumITA, “Uncertainty” MuseumUK\_2\_Pr, “Controversy” MuseumNZ. However, these associations are not usually combined with reflections that denote an awareness of the challenge of these stereotypes. Only in another sampled performance (MuseumUK\_1), did one participant observe that: “so we started positive and we finish negative.” From this point of view, I can suggest the idea that some of the participants that changed their perceptions on science/scientists and stated their awareness of their change in perceptions. This is true also for some participants who did not change their perceptions, as one participant – to my direct questions about changing perceptions on science/scientists – replied: “I guess not so much, I mean, I kind of know there were a lot of ideas and different approaches, so, I guess it’s the same. It’s just one extra person that is giving a good view of it” LibraryNZ\_2.

In conclusion, it is not easy to establish whether the participants perceived a change in their perceptions. However, when a participant commented on her/his change in perceptions on science/scientists, this comment suggested an interpretation of the shift in perceptions that resonates with the trend that I have suggested to describe the general shift in the participants’ perceptions: from neutral/positive attitudes to critical/negative attitudes. Furthermore, the fact that this is the general direction of the performance finds confirmation in the comment of one participant that did not change her/his opinion: s/he did not change because s/he already knew that “there were a lot of ideas and different approaches.” This comment highlights how the performance fostered a critical approach to science/scientists that promoted the multiplication of the points of view.

From this perspective, what seems important in the context of my research is that the performance is effective in provoking the participants in reconsidering some of their perceptions on science, regardless of whether or not these reconsiderations contribute to a change of mind in the participants or corroborate the participants' points of view. My performance then works as an open work (Eco 1989) that the participants interpret according to their background and beliefs. Thus, it seems plausible to suggest the idea that the performance is effective in engaging the participants in dialogues that are relevant for the participants' perceptions on science/scientists and that promote a critical approach to science/scientists.

## 5.2 Exploring entertainment

In a traditional guided tour, the role of the tour guide is typically defined in the literature as an ‘information-giver’. Erik Cohen highlights how: “The dissemination of correct and precise information is by many considered to be the kernel of the guide’s role” (Cohen 1985, 15). Holloway reports that tour guides “perceive their primary role to be that of information-givers” (Holloway 1981, 386). Opposing this idea, my research hypothesis is that a tour guide can be defined as a performer whose principal aim is not simply to give information, but also to entertain (see my discussion on entertainment in chapter 2, p. 50, and in chapter 3, p. 97). In this section of the chapter, I explore whether I succeeded with the practical component of my research in creating an entertaining performance. To discuss this topic, I explore the participants’ answers to two questions that I asked at the end of the performance: 1) Was this performance entertaining? Why? 2) Which part of this performance did you like more/less?

In the context of my research, Schechner’s reflection on entertainment is a useful reference point:

Entertainment means something produced in order to please a public. But what may please one audience may not please another. So one cannot specify exactly what constitutes entertainment – except to say that almost all performances strive, to some degree or other, to entertain. (Schechner 2002, 39)

The participants’ answers to my questions (1- Was this performance entertaining? Why? 2- Which part of this performance did you like more/less?) support Schechner’s opinion that different audiences have different tastes and desires: what entertained (pleased) one participant, sometimes bored (displeased) another one. An example of this situation is the following discussion of the same exhibit between two participants of the same performance:

A: E sinceramente a me le caramelle che abbiamo scoperto quel coperchio lì a me sembra un po' banale... però magari non ci arrivavano... le caramelle mi sono piaciute di meno

B: [...] e poi le caramelle perché è vero che è un'idea banale, però qualcuno l'ha avuta prima di qualcun altro e quindi forse così banale non è...

{A: Frankly, I think it is a little bit banal that they have invented that lid, but maybe they were struggling to get it... [so] I liked the [Petri dish] less

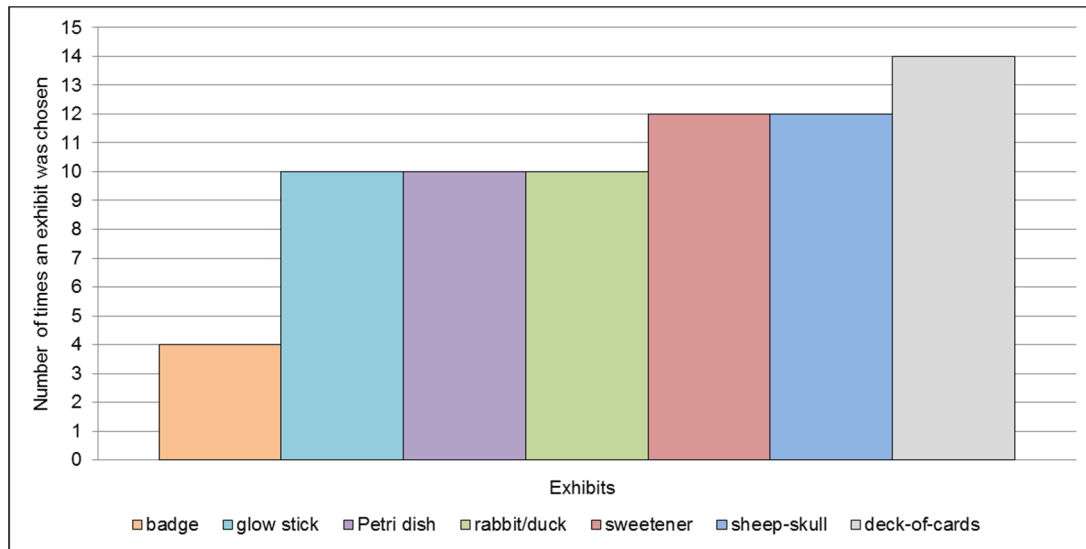
B: [...] and then [I liked] the [Petri dish] because it is true that is a banal idea, but someone had [that idea] before someone else, and thus maybe it is not that banal}. MuseumITA

In this dialogue, the second participant not only stated that s/he liked the exhibit that the first participant did not like, but s/he even said that s/he liked it for the opposite reason: what was a “banal idea” for the first participant became “not that banal” for the second participant. This example illustrates an extreme case: the same exhibit, in the same performance, was received with contrasting feelings by two participants. From this point of view, it is useful to remember that my performance changed every time, being shaped around the participants’ entrance narratives and using improvisation, and thus possibly increasing conflicting experiences of the ‘same’ exhibit during my overall experimentation. Moreover, as a performer, I used the participants’ comments to improve my work, and, for example, after the performance MuseumITA I started using a different introduction to better explain the revolutionary nature of the Petri dish. Hence, the ‘same’ exhibit had different executions, and it was not necessary, for the same reasons, that two different participants liked the ‘same’ exhibit in different performances. What emerges from the participants’ answers is then an elaborate landscape of personal tastes and unique performances in which points of contact are important in showing shared patterns.

From this perspective, it is essential to explore whether the participants’ choices of exhibits were characterised by common trends. Participants in my performance had to choose four exhibits out of seven. This choice was based on the participants’ visual preferences and natural inclinations, as I usually did not give any indication about the theme of any exhibit. Analysing the participants’ choices, I can then try to answer this

question: “Did the participants choose a specific exhibit more than any other, or did the participants choose a specific sequence of exhibit more than any other?”

The frequency with which the exhibits were chosen in a sample of 18 performances is presented in the following graph (Figure 19).<sup>84</sup>



*Figure 19: Frequency of exhibits in an 18-performance sample*

While this sample does not support any statistical analysis, two observations can be made. First, the exhibit ‘badge’ was chosen comparatively fewer times than any other exhibit. Second, all the other exhibits were chosen a similar number of times. Interestingly, the exhibit ‘badge’ was the only one with writing (“Welcome to Wellington – a nuclear-free city”, Figure 20), thus possibly the only exhibit that was providing clues about the focus of the exhibit (I will return to this point later).

<sup>84</sup> To do this analysis, I selected a sample that is different from the 14 performances that I use in my qualitative analysis (see the introduction of this chapter). I needed a different sample because I needed a set of performances with characteristics as similar as possible, while my sample for the qualitative analysis is selected to maximise variations. With a sample as homogeneous as possible, the different choices of the participants should emerge in a clearer way, even if – given the overall small number of performances done – the results of my analysis have to be read as a simple indications of trends. The sample that I used for this analysis was made of 18 performances chosen among the 35 recorded performances (see the introduction of this chapter). Specifically, all the selected performances were done in New Zealand, and all the selected performances were based on the same set of seven exhibits.



Figure 20: The 'badge' exhibit

In addition, more information emerges when I analyse when each exhibit was selected (or, in other words, how many times a specific exhibit was selected as first, second, third or fourth exhibit during the performance). The results of this analysis are shown in the following graph (Figure 21).

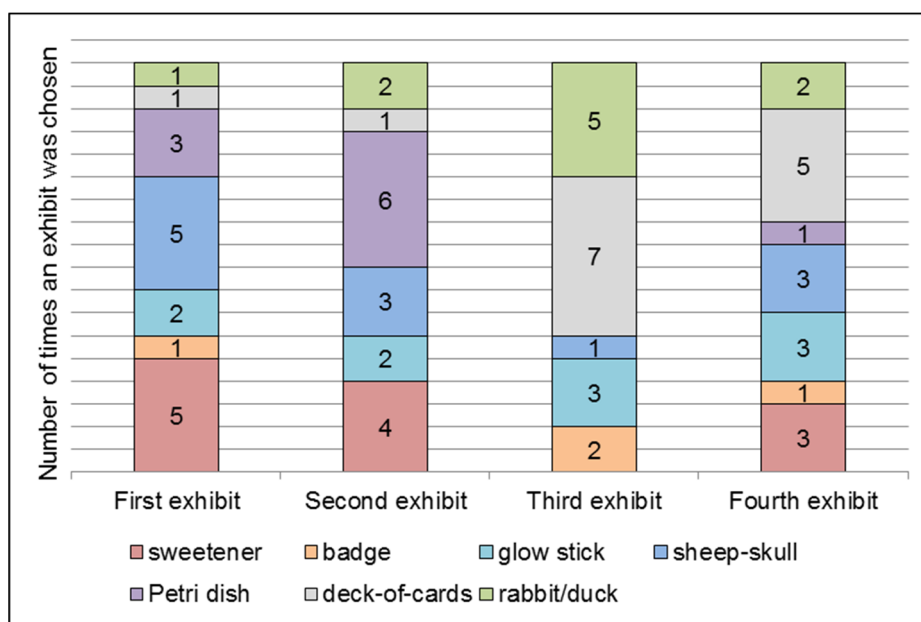


Figure 21: Graph representing how many times an exhibit was selected as 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, or 4<sup>th</sup> exhibit

As most of the exhibits appear in most of the columns, it is reasonable to say that it is not possible to predict when an exhibit is going to be chosen – and this is true even for the rarely chosen 'badge' exhibit, that appears in three columns. What emerges from this simple analysis of 18 performances are two observations. First, most of the exhibits are selected with a similar frequency. Second, there is no predictable order in the

selection of the exhibits. In conclusion, within this particular sample, the participants' choices did not follow any recognisable pattern, thus generating every time a unique – and unpredictable – sequence of exhibits.<sup>85</sup> As the 18-performance sample that I have used in this analysis of the participants' choices is as homogeneous as possible, it is reasonable to say that there is no common pattern also in the rest of the performances. Each performance is unique, and the participants' reasons for choosing one exhibit instead of another remain unexplained. The fact that each performance is unique means that – once again – any shared reason to consider my performance entertaining (or not entertaining) is particularly useful in highlighting interesting elements of the participants' experiences.

In the first part of this section, I discuss if (and why) the participants found the overall experience of the performance an entertaining one. In the second and third parts, I explore what the participants liked in a single exhibit, thus trying to gain a better understanding of the possible entertaining value of the performance at a finer level. These two last parts focus on distinctive themes that the participants seemed to associate with something they liked in the performance: surprise and learning.

### **Many aspects of one experience**

In this first part, I discuss whether the participants found the overall performance entertaining and why. My discussion is based on a question that I asked at the end of every performance. The question was: “Was this performance entertaining? Why?” The first part of the question received “yes” in all the 52 performances that I did. As I have already discussed (see the introduction of this chapter), this monochromatic response has to be read in the context in which the question was asked: the performer, just after finishing the performance, asked the participants if the performance was entertaining. I am under the impression that few people would comfortably answer “no” in such a situation. However, at least when the answer was not just affirmative but also enthusiastic, it is possible that the participants felt, indeed, entertained.

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<sup>85</sup> My performance allows 840 different sequences of exhibits. No sequence has been repeated.

The second part of the question (Why [was this performance entertaining]?) generated a varied series of reasons. This, in the context of Schechner's opinion on entertainment (see p. 175), is unsurprising. What is noteworthy is that the participants seemed to imply that there was no *single* reason for their answer. On the contrary, the reason for which the performance was entertaining was a collection of elements. Three performances are particularly relevant in exploring this idea, as the participants provided articulate reasons for their likings. The performances are: PrivateNZ\_Car, MuseumUK\_1, and PrivateNZ\_Uni.

The participants of the PrivateNZ\_Car stated:<sup>86</sup>

Yeah, it is, very [entertaining]. / Use of humour. / Different tones of voice. / Engaging us. / That you would leave us to come to certain conclusion, so you would not give it all to us, you sort of get us to participate and give answers – but at the same time it wasn't like an interrogation. / And you personalised it, like you remembered [what we told you at the beginning]. PrivateNZ\_Car

This set of answers suggests that several elements of the performance concurred in making the performance entertaining. First, a comic element (“use of humour”). Then, a theatrical element (“Different tones of voice”). After that, few things that can be possibly grouped under the idea of interactivity: engagement, active participation, personalisation. Finally, the comment: “but at the same time it wasn't like an interrogation” is interesting, because it points toward the possibility that the overall performance was a “flow experience” (Csikszentmihalyi 2008) for the participants, and this was something that I was specifically trying to achieve (see p. 120).

Participants of the MuseumUK\_1 performance highlighted a different mix of elements:

Yeah. It's fun, it's interactive, everybody gets straight in, you're learning something. / It's unexpected / A lot of unexpected questions. / Surprising. / There is dynamic, it's not as linear as science can be. / It's engaging, you can

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<sup>86</sup> Comments from different participants are separated by “/” in all the following quotes.



touch things. / It's got visual, it's got narrative, it's got dialogue. / Sharing opinions on experiences. / The mysteries of all the objects. MuseumUK\_1

Some elements of these answers are common to the previous one: a comic element ("it's fun"), the idea of interactivity ("it's interactive, everybody gets straight in / It's engaging, you can touch things"). However, for these participants there are three other elements that help to make the performance entertaining: an element of learning ("you're learning something"), an element of surprise ("Surprising"), and an element of social experience ("Sharing opinions"). The association between entertainment and learning confirms findings in museum studies that have already highlighted how: "Most museum visitors see no apparent conflict between fun and learning" (Falk, Moussouri, and Coulson 1998, 117) (see chapter 2, p. 51). The element of surprise is quite prevalent in this set of answers, and I will come back to it in the next part of this section. However, I think here it is important to note how many of the comments can be read as expression of surprise. From the more straightforward ("It's unexpected / A lot of unexpected questions / Surprising / The mysteries of all the objects"), to the ones that refer to surprise as variations ("There is dynamic, it's not as linear as science can be / It's got visual, it's got narrative, it's got dialogue"). Specifically, these last comments seem to suggest that the idea of structuring the performance as a variety show (see chapter 4, p. 121) was effective in creating an entertaining experience for the participants.

Finally, participants of the PrivateNZ\_Uni liked the performance for another combination of elements:

Yes, we laughed a lot. / I think we learned more. / I think it was an interesting mix between storytelling and a chance for us to add our own stories. / but as you said too, because you learn something about the other people that you are working with, that's an added bonus, really. PrivateNZ\_Uni

For these participants, the mix that made the performance entertaining was made of a comic element ("we laughed a lot"), a learning element ("I think we learned more"), and the idea of interactivity ("I think it was an interesting mix between storytelling and a chance for us to add our own stories") that – in the idea of social interaction – can probably be extended also to the final comment ("because you learn something about the other people that you are working with, that's an added bonus, really").

In conclusion, two elements are present in all three performances: a comic element and an element of interactivity. Specifically, the participants of the analysed performances highlighted how during the performance they interacted – among themselves, with the performer, with the exhibits. Thus, the performance is definable as an active form of entertainment. The two elements (comic and interactive) appear to be common elements that define the specific entertaining dimension of the performance. In synthesis, then, I can advance the idea that, for the participants, the performance was entertaining because it was a fun and interactive experience.

## **Surprise**

In the previous part of this section, I discussed how, from the participants' point of view, the overall performance was a fun and interactive experience. Here, I explore the first one of two themes (surprise and learning) that I consider notable in the participants' discussion about what they liked (or disliked) in an exhibit. In other words, I try to understand what pleased the participants at the exhibit level, and not at the performance level. My discussion of these two themes is based on a question that I asked at the end of every performance. The question was: "Which part of this performance did you like more/less?" In this part, I examine the element of surprise.

Two participants that explained their preference for exhibits that had a strong element of surprise were PrivateNZ\_Wan\_Pr and PrivateNZ\_Lisb:

I think probably my favourite was the saccharine one. And partly I think because it was, you know, I had no idea what was going to happen next: so there was a real novelty around... and a real sense of excitement. [...] And the same with the cards: you had the cards trick and so I thought the second one was going to be a card trick – which was very clever, because I was totally engaged, and you had me thinking [...] "how did he manage that?" – and then you are doing the next and I think "oh he's doing another card trick" [...] [but] it went into something completely different, and I loved both of those, the element of surprise. PrivateNZ\_Wan\_Pr

I liked the cards [...] because of all the story that went along with, what's real and what isn't and how if it's not true [...], and how the impact could be devastating and so it's very powerful. [...] With the other ones, I kind of had a sense of where you may be going with them [...], but with the cards I did not know where the hell that was going, so it was more of a really open, you know, mystery. And bringing in all together at the end [...] makes the point very lovely. It's a good way of telling that story. PrivateNZ\_Lisb

These two participants seemed to like the element of surprise in two slightly different senses. First, they both liked when the exhibit was able to keep them in suspense. In other words, when they "did not know where the hell that was going". Nevertheless, reading the first participant's comment, I can suggest that for this participant the element of surprise was also linked with the idea of new: "there was a real novelty around ... and a real sense of excitement".

By contrast, the lack of surprise is also mentioned as a reason for disliking an exhibit. The following three comments are examples of that:

Maybe [I liked the least] the photo, because it does not have a punchy ending, less complexity, it's a simpler thing so it's less challenging to your mind. PrivateNZ\_Lisb

My least interesting was this one, probably because it has the least interesting visual [...] it's less colourful, it's far more flat, it's less intriguing, it's far more explicit [...] while this is 'what's gonna be?' [...] so that was more a discovery. MuseumUK\_1

Bunny/duck for me [was the least interesting] but I think that's possibly just because that's what I have been doing the whole day [...]. I found it the least engaging, possibly because I've seen the bunny/duck before, so I already had an idea that it was gonna be about interpretation [and] that didn't surprised me, I needed a twist. MuseumUK\_2\_Pr

In these three comments, it is possible to find the two different variations of the concept of surprise that I have presented before. Specifically, in the first and third comment the idea of surprise could be interpreted as (lack of) “novelty”. On the contrary, the second comment seems to refer to the idea of surprise as (lack of) suspense.

In conclusion, it appears that participants liked an exhibit if the exhibit provided them with an element of surprise. This hypothesis could explain why the exhibit ‘badge’ was chosen comparatively few times during the experimentation (see Figure 19, p. 177). As I have already pointed out (see p. 178), the exhibit ‘badge’ was the only one that presented some writing (see Figure 20, p. 178). It is possible that the participants, looking for potentially new and surprising experiences, did not choose an exhibit that presented more clues about its topic than any other exhibit.

## **Learning**

In this final part, I explore the theme of learning in the context of the participants’ discussion about what they liked (or disliked) in an exhibit. Specifically, I aim to answer this research question: “Does the participant gain information about science that s/he considers useful?”

Even if the main focus of the performance was on entertainment, learning was an integral part of the participants’ experience, and some participants cited some aspect of ‘learning’ as a reason why the performance was entertaining (see p. 180). In other words, learning was a reason for them to like the performance. Furthermore, one of the participants commented on how the relaxed atmosphere (see p. 120), contributed to her learning experience:

If you don’t know the answer you don’t feel stupid. [...] you are trying to get [the right answer], but you are not afraid of saying the wrong thing. [...] I felt that it was a safe environment [...] so you can ask questions, and you can learn, without being worried. And you learn more when you are not worried. So if you are enjoying the experience, you will learn. PrivateNZ\_Lisb

Two main aspects of learning emerge from the participants' comments. The first is linked with a practical dimension of knowledge, the second is linked with a theoretical dimension of knowledge. Two participants' comments that exemplify the first aspects are the following:

I like that [glowing stick] for a very selfish reasons: I have always wondered, as an engineer, it's always been in my mind 'what's going on there?' And I always thought it was a reaction to the way you break it, [...] but the fact that it's actually two liquids coming together it's quite a revelation for me, so thank you.  
PrivateNZ\_Lisb

Il primo mi è piaciuto di più, perché ho capito tante cose che non sapevo [del glowing stick] {I liked the first one [glowing stick] best, because I have understood many things that I didn't know}. PrivateITA

These two comments highlight how the participants found information that they considered useful in understanding how a physical object works: "the fact that it's actually two liquids coming together it's quite a revelation for me," "I have understood many things that I didn't know."

The second aspect of learning, linked with a theoretical dimension of knowledge, is present in these participants' comments:

Di più ci è piaciuto il glowing stick, perché da questo si sono dedotte delle cose che possono avere una grande utilità {I liked most the glowing stick because thanks to that exhibit I understood things that can be very useful}. MuseumITA

Il mais, perché lo ritengo un discorso che in futuro peserà molto {The corn exhibit, because I believe that that [GMO] is going to be something quite important in the future}. PrivateITA

Questo [rabbit/duck], perché mi ha fatto pensare a come guardare le cose {The rabbit/duck because it made me think about how to look at things}. SchoolITA

These three comments suggest that the participants learnt something that they considered important from an intellectual point of view. Either because the information that they learnt might help them in understanding the future (“I believe that that [GMO] is going to be something quite important in the future”), or because that information changed the way they were looking at things (“it made me think about how to look at things”).

In conclusion, I think I can positively answer the research question: “Does the participant gain information about science that s/he considers useful?” The participants learnt during the performance, and in particular the participants found two types of useful information. First, practical information that satisfied their curiosity about how things work. Second, theoretical information that provided the participants with reference points to understand the present and the future.

### 5.3 Perceived differences between the performance and a museum guided tour

In this last section of this chapter, I discuss differences and similarities between my performance and a museum guided tour from the participants' point of view. This discussion is based on the participants' answers to a question that I asked at the end of the performance: "Do you go to museums? If yes, is this performance different from a guided tour? How?"

The main research question that I am attempting to answer here is: "What are the differences between my experimentation and a traditional guided tour?" A secondary research question that I explore is: "If I create a guided tour in which the sequence of the presented objects is decided by the visitor, in what way, if any, will this change help me in engaging the visitor?"

To answer these questions, I have organised the participants' answers in three groups. First, answers that suggest that an important difference between my performance and a museum guided tour is interactivity. Second, answers that focus on the depth of the stories of the performance. And finally, answers that highlight the different power structures that characterise my performance and a museum guided tour.

Some participants had an extensive experience of guided tours and referred to it in their answers. By contrast, other participants appeared to have less direct experience and thus they possibly referred to their idea of museum guided tour. This idea was not always grounded in recent experiences, and it is probable that some participants compared my performance with their 'organic' stereotype of what a museum guided tour is. The idea of an 'organic' stereotype is presented by Black in his discussion of the negative attitude that some people show toward museums:

Although museums have transformed themselves over the last thirty years, they are still thought of by many non-users as dry, dusty place, with cobwebs on the displays, and staffed by surly, unwelcoming or even rude museum attendants who are clearly out to ensure you do not enjoy your visit. This is substantially what marketers would refer to as an 'organic' stereotype, one that is the result

of half-remembered, distant experiences, conversations, television programmes, etc. (G. Black 2012, 27)

It is then possible that some of the participants' comparisons were based on biased premises. This hypothesis could explain the strongly favourable view in which the participants sometimes described my performance.

### **Interactivity**

In this first part, I discuss the idea that a difference between my performance and a museum guided tour could be found in the degree of interactivity between the participants/visitors and the performer/tour guide.

In the context of this analysis, interactivity appears to cover two slightly different ideas. The first idea of interactivity that emerges from the participants' answers points toward actions that the participants performed: touching and choosing exhibits, asking and answering questions. The second idea of interactivity points toward the fact that the performance itself interacted with the participants, reacting and adapting to them.

Three performances that illustrate the first idea of interactivity are PrivateNZ\_Car, PrivateNZ\_Nat, and MuseumITA.<sup>87</sup>

Yes, yeah / Cause [in guided tour] you do not get to touch anything, that's for sure. / [...] They [tour guides] do not involve you at all: they just show you stuff. / It's quite passive when you go to a museum. / Sometime I have heard really good storyteller as guide but they don't ask you to participate – they just tell you the information. PrivateNZ\_Car

Yes, because [this performance] it's funny and more interactive. [...] A guided tour in a museum is not too dissimilar from someone just reading out a guidebook: [it's] more a one-way communication [...] and it's not a personal

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<sup>87</sup> Comments from different participants are separated by “/” in all the following quotes.



tour [...], and their goal is more informative rather than engaging [in a discussion on] the boundaries between science and [society]. PrivateNZ\_Nat

No è diversa. Perchè coinvolgi di più. La visita guidata uno è passivo, mentre qua uno partecipa. / Questa è più interattiva. / Anche più interessante: comunque in una visita guidata vedi quello che ti fan vedere loro, invece qua abbiamo deciso noi gli oggetti da [esaminare] {It's different. Because you involved us more. In a guided tour, one is usually passive, while here one is participating. / This is more interactive. / And also it is more interesting: in a guided tour you see what they show you, instead here we have chosen the exhibits}. MuseumITA

These three sets of answers suggest how the experience of a guided tour is perceived by these participants as a passive experience that is quite similar to listening to someone ("A guided tour in a museum is not too dissimilar from someone just reading out a guidebook: [it's] more a one-way communication" PrivateNZ\_Nat). In a nutshell, then, the difference between a guided tour and the performance is the difference between listening to a monologue and taking part in a dialogue: "[This performance] was a kind of dialogue, whereas it's often not so much a dialogue, it's more a monologue in a guided tour" MuseumUK\_2\_Pr.

One of the guiding principles of the performance is the idea of dialogue (see p. 60). From this point of view, it appears that the performance was able to actually achieve a dialogic relationship with its participants. Furthermore, this dialogic relationship did not seem to be confined only in the superficial structure of the performance (touching and choosing exhibits, asking and answering questions). As I have anticipated before, the second idea of interactivity that emerges from the participants' answers points toward the fact that the performance in itself was interacting with the participants: the performance reacted and adapted to the participants. This idea is exemplified in the following comments:

Very much different, because it was interactive ... [in a guided tour] you just go around and observe what they tell you, you don't put in your experience of those objects that they are showing you. You are taking the science to us instead of us going to the science. LibraryNZ\_1

Cioè in pratica è come se fossi un po' te il protagonist: ti ci vedi in quel che parli, e cioè, vai a capire fino in fondo {it's a little bit like you are the protagonist: you see yourself in what you say, and you understand things through}. MuseumITA

Yes, because you are told about things in a guided tour, this is much more about us. PrivateNZ\_Uni

The thing for me was the asking questions and building on what people already knew. That's the thing that I liked [in this performance]. PrivateNZ\_Car

These answers also have a further common point other than the idea of the performance as an interactive event. This further point is the idea of personalisation: the performance is more interactive than a guided tour because the performance is personal (“you are taking the science to us instead of us going to the science” LibraryNZ\_1; “you are the protagonist” MuseumITA; “this is much more about us” PrivateNZ\_Uni). Starting from these observations, I can suggest that the participants’ perceptions of the performance as a personal event were the result of two communication strategies: first, the use of the participants’ entrance narratives, and second, the use of improvisation (see Figure 13, p.133). The first strategy was detected by two participants: “the asking questions and building on what people already knew” PrivateNZ\_Car; “you personalised it, like you remembered [what we told you at the beginning]” PrivateNZ\_Car. By contrast, the fact that the second strategy, improvisation, was never mentioned could mean that the participants did not realise that I was improvising.

In conclusion, a first point of difference between my performance and a guided tour is that the participants experienced the performance as an interactive event in which they played an active role and that they felt the performance was personally relevant. On the contrary, the participants defined a guided tour as a passive event, in which their only role was to listen to the guide.

## Depth

In this second part of this section, I start from the idea – discussed also in the previous part – that, in the participants’ experience, a museum guided tour is mainly a facts-based monologue (“They just kind of present you with facts, they do not really put much behind it” PrivateNZ\_Car). From this point of view, some participants’ comments describe the performance as a deeper source of complex information than a museum guided tour. Two interesting comments on this topic are subsequently presented:

One thing with museums and guided tours. Like, sometimes I go to museums but there is this thing, like I am going to learn everything today, and I stay there till I’ve learnt everything and never leave the building [...]. And I’ve got friends who have gone to museums for like seven hours, all day museum, and this [performance] was just four stories, but it went deeper. I feel I have totally understood science all over again, I feel excited about it, which is way better than getting a lot of facts in an afternoon. PrivateNZ\_Car

The depth of the stories is what is so interesting, [...] and all the other discussions that then can come, like women and their role in science. PrivateNZ\_Uni

As stated by one participant, during the performance the participants usually explored four exhibits in one hour. In my personal experience as a visitor, one-hour museum guided tours tend to introduce the visitors to a minimum of eight/ten exhibits. This means that each exhibit, in a guided tour, has to be discussed faster than in the performance.<sup>88</sup> A probable consequence of a fast presentation is a lack of complexity. From this point of view, it is not so surprising that the participants considered that the experience of the performance was deeper than in a museum guided tour: more time, more complexity.

However, I am not sure that just reducing by half the number of exhibits presented in a guided tour would automatically produce a deeper experience for the visitors. What I would like to suggest is that the deeper participants’ experience is

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<sup>88</sup> Under the reasonable hypothesis that each exhibit gets a similar portion of time.

linked not just with a smaller number of exhibits, but also with a different approach to the meanings of the exhibits. This different approach is detectable in this participant's comment:

For me, I think it was always that link at the end. [...] so I lost you at one point when you were explaining this [pointing at the glowing stick], but then you tied back with, like, how this is a metaphor for science. For the sheep [you tied back with] local versus global. And the feminist with the Petri dish, what gets recognition ... it's just that sort of conclusion at the end, it's not even a conclusion, it's almost giving us more questions. PrivateNZ\_Car

First, from this comment it is possible to deduce that – like in a guided tour – in my performance I presented facts and information (“when you were explaining this [pointing at the glowing stick]”). However, I then used this information to suggest possible reflections on science and society. For example, the glow stick became “a metaphor for science”, while the Petri dish became a symbol of gender in science. These reflections usually evolved into open-ended discussions whose aim was to leave the participants with more questions than answers. The consequence of this strategy can be possibly seen in some of the associations made by the participants after the performance (“Confusione {confusion}” MuseumITA, “Uncertainty” MuseumUK\_2\_Pr, “Controversy” MuseumNZ), as I have already discuss in the first part of this chapter.

In conclusion, my interpretation of the perceived difference in the level of complexity that the participants described comparing the performance and a museum guided tour is rooted in how the information was used in the performance to provide the participants with opportunities to actively think about the meaning of the exhibits, going beyond mere interesting explanations. In other words, the information in the performance was critically examined by the participants with the help of the performer. By contrast, the information in a museum guided tour is simply delivered by the tour guide to the visitors. From this point of view, the core of the difference between the performance and a museum guided tour is, once again, active participation.

## Power

In this last part, I explore the participants' perceptions on the different power structures that characterise my performance and museum guided tours. The first two comments that I discuss here make an indirect reference to the topic of power structures:

Oh God yes! Absolutely. How is it different? In every single way! Well, on a guided tour – which we had done many, because we are friends of the City Art Gallery, and friends of Te Papa, and friends of Pataka etcetera [...] and they never ever, I have never been asked: 'Shall we start here?' or 'Do you want to talk about this? What [does] capture your eyes?' It's always like: 'Well, people, if you just wanna come, I take you over to this one here' [...], and maybe [they give] a wonderful tour, but they control the tour. And you are passive: questions are not really encouraged, you know, you can, but it's not like 'Ask me more!' PrivateNZ\_Lisb

The guided tours that I have taken were very different because the guides tell you what picture [to look at]. They stay in front of the picture, they tell you everything they know about the picture, [and] if there is anything you want to know you can't actually ask the question, you're just an auditor [...]. You are locked in their narrative. MuseumUK\_1

These two answers describe the museum guided tour as a situation of asymmetrical power: the tour guides "control the tour", and "you are locked in their narrative". The representative of the institution (the tour guide) makes every choice, and visitors do not even feel free to ask questions. From this point of view, I think it is easy to see one difference between museum guided tours (as described by these participants) and my performance: my performance asks its participants to choose which exhibit they want to explore. Thus, in the performance the power relation is inverted: while in a museum guided tour the visitors have to adapt to the tour, in the performance it is the performance itself that adapts to the participants. A consequence of this different power relation seems to emerge from the participants' answers, as in the museum guided tour the visitors are not free to ask question, whether – the comments seem to imply – the participants are encouraged in asking questions during the performance ("Ask me more!").

Nevertheless, the use of power in a museum guided tour is not limited to the choice (or rather, the lack of choice) of the exhibits. Another critical point is the assumption about who, in the relation between the tour guide and the visitor, has more knowledge. The following comment thoroughly explores this topic:

It's similar but better. Much much much better. And I tell you ... I mean, the thing is, a guided tour is the knowledge ... how can I put this ... the power structure, if you like, is shifted with what you do, away from the implicit assumption that the tour guide is the knowledge holder, [because] you are drawing out what I might know about a topic or I might be interested in. Whereas the typical guided tour assumption – especially thinking of large museums [let's] say in Europe or wherever – [is that] you know nothing. So, I might be going to a palace in Germany, and they just assume that I am a scant beginner even if I may know some European history. Whereas [in] what you have done, you share that power with me and the entire conversation is much more meaningful to me, and one that I am much more likely to remember.  
PrivateNZ\_Wan\_Pr

This comment is important for three reasons. First, the model of communication that characterises a museum guided tour (in the description of this participant) is close to the deprecated 'deficit model' of science communication (see chapter 2, p. 57). Both these models start from the assumptions that the communication process is unidirectional and that the receiver of the communication process has no relevant knowledge. As studies in science communication have demonstrated (Wynne 1992; Wynne 2014), the 'deficit model' is ineffective in engaging with the general audience (and undemocratic).

The second reason for which the previous comment is significant is that it suggests the idea that a performance built around the participant's entrance narratives is "much more meaningful to me, and one that I am much more likely to remember." In other words, the assumption that any participant has relevant knowledge of the exhibits, and that that knowledge can actually be used during the discussion of the exhibits, is an effective strategy not only to communicate information, but also to improve the possibility that that information will be remembered. If the point of a

museum guided tour is to disseminate information, I am under the impression that starting from this assumption could generate more results than will be achieved by using the deficit model.

The third reason that makes this participant's comment noteworthy, in the context of this analysis, is its very beginning: "it's similar". This sentence resonates with another participant's comment: "It was [similar] in a way, actually, because you were guiding the conversation" MuseumUK\_1. These comments highlight how in my performance I had a leading role that can be considered analogous to the tour guide's leading role during a museum guided tour. Despite giving to the participants the freedom to choose the exhibits, I was still the only one that knew 'what happens next'. Even if I introduced the performance and explained its structure, the participants naturally relied on me during the execution of the performance. Furthermore, I was the only one that had the power to decide whether or not it was time to choose another exhibit.

In conclusion, from the point of view of the distribution of power, the participants' comments highlight two differences and one similarity. The similarity is that I had a leading role during the performance, in the same way in which a tour guide has a leading role during a guided tour. The differences are that, first, in the performance the participants could decide which exhibit to explore, while this choice is typically denied in a museum guided tour. Second, the performance started from the assumption that the participants had relevant knowledge, thus sharing the power position of "knowledge holder," while in a museum guided tour the visitors are considered empty vessels into which the tour guide will pour her/his knowledge. These differences helped in engaging the participants who felt free to ask questions and who experienced a performance that was built around their entrance narratives. Finally, as the presence of questions is the hallmark of a successful guided tour (see p. 91), I can suggest that my performance, as a guided tour, succeeded.

## ***Conclusion***

In the first section of this chapter, I have suggested the idea that my performance was effective in engaging the participants in dialogues that were relevant for the participants' opinion on science/scientists and that the performance was able to promote a critical approach to science/scientists.

In the second section of this chapter, I have advanced the idea that the performance succeeded in entertaining its participants. Specifically, my analysis shows that the performance entertained its participants because it was fun and interactive.

In the third section of this chapter, I have explored the differences and similarities between the performance and a museum guided tour from the participants' point of view. Key differences are the fundamental role that interactivity played in the performance, and a shared position of 'knowledge holder' between the participants and myself.

I can then suggest that my performance was effective in entertaining the participants and that this fact has noteworthy consequences: the participants had fun, they learned information that was relevant for them, they socialised and critically discussed science and scientists. However, it is important to remember that these suggestions are based on performances with a self-selected group of people with a specific background (see my discussion on participants in chapter 4, p. 149). Furthermore, these suggestions cannot be generalised to all the possible past and future participants, as these suggestions are the result of a qualitative analysis based on purposeful sampling. Nevertheless, Patton's consideration on generalisation is interesting: "while studying one or a few critical cases does not technically permit broad generalizations to all possible cases, *logical generalizations* can often be made from the weight of evidence produced in studying a single, critical case"<sup>89</sup> (Patton 2002, 236). Following Patton's lead, I can reasonably extend some of my findings to cases and situations that have a logical correlation with my sample.

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<sup>89</sup> Emphasis in original.



Specifically, I can explore whether my performance could have an impact on the museum practice of guided tours. Two issues limit the application of my findings to the museum guided tour: the museum environment and my performing style. The first obstacle, the museum environment, is well described in this participant's comment:

[This is] a casual ambience, so there isn't a formal ... You haven't walked into this imposing hall, and you aren't alienated by the space, you are not thinking: 'ah all these people in here had to study so much, I'm just kind of half in and I don't know anything, I just stand here and read this little museum card'. It's just totally different. PrivateNZ\_Lisb

Not every museum presents such an "alienating" space, but it is difficult to deny that museums are specific spaces that do not always welcome the casual and relaxed atmosphere that characterised many of the locations in which my performances occurred (see my discussion of the museum setting in chapter 2, p. 65). However, I carried out my performance in a few museums and cultural institutions and the participants seemed to enjoy it (see for example the participants' comments of MuseumITA, MuseumUK\_1, MuseumUK\_2\_Pr, MuseumNZ). From this point of view, I think it is reasonable to suggest that even if the place in which the performance happens plays an important role, the performer still has some agency to make people at ease even in a traditional museum.

This observation brings me to the second issue: my performing style. My performing style is one of the reasons the participants gave when explaining why the performance was entertaining: "Very entertaining, because the presenter has an engaging presence" PrivateNZ\_Lisb; "Yes, this was very entertaining. Cause you are very lively, actually, so there is a lot of energy going into this and so that made it fun" PrivateNZ\_Nat; "You are a great moderator / I think if you weren't so engaging it would not work so well" MuseumUK\_1. What emerges from these comments is that the performance worked also partially thanks to the way in which I performed it. This is not surprising, because as Susan Sontag has noted, there is no separation between content and form: the form is the content (Sontag 1998, 40).<sup>90</sup> From this point of view,

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<sup>90</sup> Sontag's observation resonates with McLuhan's observation: the medium is the message (McLuhan 2001).

my style is the performance, and thus the problem of the transferability of my model arises: if I am the only one that can perform this performance in this way, what is the use of this experimentation in the museum sector? However, my research hypothesis (a guided tour is a performance) provides a possible solution to this impasse. Different actors successfully interpret the same character. Thus, different performers can successfully perform according to the same structure that I have created in my experimentation. The final result will be different, but this does not mean less successful. Nevertheless, it is important to note that Tsybulskaya and Camhi, in their cited study about the integration of visitors' entrance narratives in guided tours (see p. 32), report how inexperienced tour guides meet difficulties in integrating the visitors' entrance narratives in their guided tours (Tsybulskaya and Camhi 2009, 96). On the same point, Ford comments on the use of professional actors in museums to directly engage visitors in improvised dialogues. He considers that:

To work really efficiently through this style does require an outstanding level of knowledge, understanding and skill on the part of the actor/interpreter and raises questions about the required qualifications, status (and perhaps salary) of such people within the museum. (Ford 1997, 55)

As guiding is usually a part-time, between-jobs occupation (see p. 86), it is reasonable to suggest that experienced tour guides are a minority in museums. From this perspective, integrating my model (see Figure 13, p. 133) in a guided tour could be problematic. Hence, an effective application of my model is linked with a necessary shift in the way in which museums consider the tour guide's role (see p. 85). Tour guides are the faces of museums. If museums want to have engaging and effective dialogues with their visitors, museums should invest in their tour guides.

## 6. Conclusion

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My research journey comes to an end with this chapter. Starting with my first epiphany in Genoa, I have explored the relations among performance, tour guiding and science communication through interviews, experimentation and qualitative evaluation. The initial intuition that a guided tour *is* a performance has revealed itself to be a fertile starting point to create a participatory and dialogic live performance on science. A performance that is similar to, albeit different from, a museum guided tour.

Every performance is unique in my experimentation. Nevertheless, they are all part of the same journey: the map that represents my research is made up of single points that connect in a meaningful trail when looked at from the distance. In this chapter, I present this overall vision, highlighting significant theoretical implications and achievements, and suggesting possible directions for future explorations.

### ***The multiplicity of the performance***

Through my research, I have emphasised the importance of multiplicity: there are multiple ways to interpret an exhibit, and there are multiple opinions on science and scientists. Consistent with this approach that values diversity, it is important to suggest that there are also multiple ways to define my performance. These different ways do not contradict each other, but complement each other, adding complexity to the landscape of my research. Here, I explore these different ways of describing my work: ways that highlight different aspects of the same experience, and thus show how my research makes different contributions to the exploration of its topic.

In academic terms, I can define my performance (Carlson 1996) as a dialogue-based (Bohm 2013) activity (Kaprow 2003) during which I interpret (Staiff 2014) science-related objects and stories through popular theatre techniques (Fo 1991; McGrath 1996) and the participants' entrance narratives (Tsybulskaya and Camhi 2009). My aim is to entertain (Schechner 2002) the participants (Kelley 2003) of the performance through a critical approach (Feyerabend 1993) to science and scientists (Collins and Pinch 1998; Erickson 2005; Latour and Woolgar 1979).

This description of the performance emphasises the connection between my work and the body of knowledge on which my work stands. My work is in a metaphorical dialogue with the works of the authors from whom I have taken inspiration and who have contributed in shaping my own research. My performance, then, exists both as a practice that has influenced its participants, and as academic research whose findings are disseminated through this thesis, which might in turn influence subsequent research.

I can also define my performance as a *metaperformance*: the actual performance of the cultural performance of a museum, the *Science Museum in a Pizza Box*.<sup>91</sup> When visitors participate in such a performance, they are not just participating in a performance, but they are also participating in a cultural performance and hence creating science.

This definition can be extended to the museum guided tour, thus providing a new way to frame the practical and theoretical doings that characterise a guided tour, and opening new approaches to the study of guiding. A guided tour becomes, then, the subject of study from two related perspectives. First, the guided tour *is* a performance. Second, the guided tour *as* a cultural performance. These two aspects are present at the same moment during a guided tour, thus making the museum guided tour also a metaperformance. This definition of the guided tour enhances the complexity of guiding, while highlighting how the relationship between visitors and guide is rooted in their physical and verbal interactions as well as in their cultural interactions.

A further important way to discuss my performance is through the concept of ‘activity’. With the term ‘activity’ I refer here to the lifelike artistic performance originally proposed by Allan Kaprow. According to Kaprow, an activity performs the performance of everyday human actions: brushing the teeth, shaking hands, using a phone (Kaprow 2003, 188). One of the aims of an activity is to gain awareness of the performance of the human action that is performed during the activity itself. An activity, then, has the potential to help the performer in re-discovering the structure and the meanings of the action re-performed.

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<sup>91</sup> I use the word ‘metaperformance’ to define the performance of a performance. This use of the word ‘metaperformance’ mirrors the use of the word ‘metalanguage’, which means: “words that are used for talking about or describing language” (Mayor 2009b).

The action that the participants in my performance re-perform is a dialogue on science. Performing a dialogue is discovering the dialogue. Through a dialogue on science, it is then possible to discover science, specifically the science that is in the dialogue. If the dialogue that is performed is based on an everyday dialogue, it could be possible to discover the science in the everyday. That science is always there, but we do not think about it, until we consciously perform a dialogue on science that reflects on everyday situations. This dialogue, in everyday life (as well as in the performance), contributes to creating science, as I consider science to be “a social construct, which the whole society is involved in creating” (Erickson 2005, 3). Re-performing a dialogue on science has the potential of fostering awareness of the creation of science as a social construct. In the same way in which Kaprow blurs the difference between art and life (Kaprow 2011, 32), I blur the difference between life and science, revealing the presence of science in everyday life.

Defining my performance as a Kaprowian activity allows me to highlight the connections among the performance, science and everyday life. From this perspective, the performance does not present an abstract idea of science, but reveals through repetition the presence of science in everyday objects, choices, and dialogues.

My performance, then, can also be described as a science communication event: an experience that has at its core the communication of science. The model on which such communication is based, however, reverses the assumption of the ‘deficit model’. The starting point is no longer the science that a cultural institution wants to convey to the public, but the knowledge that the public already has. This communication process flows from the public to the institution, leading the institution to adapt its content to fulfil public expectations.

From this perspective, my performance represents a new model of science communication in which the public’s knowledge becomes central in the public discussion of science. Science communication is no longer a way to educate the public, but a way *for the public* to address and clarify scientific issues in the public sphere.

Finally, another way to explore my performance is in relation to Umberto Eco’s idea of ‘open work’. Eco describes how open works “appeal to the initiative of the individual performer, and hence offer themselves not as finite works, which prescribe specific repetition along given structural coordinates, but as “open” works” (Eco 1989, 3).

While Eco speaks about an “individual performer,” I would like to suggest that in the context of my performance this “individual performer” becomes the collective of the participants: the participants are the ones to whom the work is offered.<sup>92</sup>

The possibility of defining my performance as an open work is based on the absence of an overall dramaturgy of the piece. The different exhibits are offered to the participants as building blocks for their experience. Like children playing with construction blocks, the participants are free to build whatever they want – but only using given blocks. This specification – the participants can only rearrange the blocks, and not create new ones – is important in defining the authorship of the finished performance. Eco suggests that: “[...] the author offers the interpreter, the performer, the addressee a work *to be completed*. He does not know the exact fashion in which his work will be concluded, but he is aware that once completed the work in question will still be his own” (Eco 1989, 19).<sup>93</sup> I do not agree with Eco’s position on the authorship of an open work: from my point of view, the “author” who provides the building blocks is only one of the creators of the final work. It is true that without me offering the building blocks there is no performance, but there is also no performance without the participants playing with the building blocks. The final performance, then, has a shared-authorship, which emerges from the interactions between my exhibits and the participants, even despite the autobiographic dimension that some exhibits have, like the ‘sweetener’ exhibit where I use a picture of myself.

I find it relevant to compare the approach of some museums, which offers “a defined interpretation of their collection on site” (Ford 1997, 57), with the lack of definitive interpretation that characterises my performance. Defining my performance as an open work allows me to highlight that the approach of my performance offers an *open interpretation* of a collection. This open interpretation questions the role of the museum as a cultural authority, while framing the museum as an open forum for the creation of multiple meanings. This approach resonates with the words of Macdonald and Basu, when – commenting on experiments in new ways of exhibition – they say: “the exhibition becomes transformed from a space of representation into a space of

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<sup>92</sup> Using Allan Kaprow’s words: “The conventional spectators became the participants who executed the changes. [...] [T]he traditional notion of the uniquely talented artist (the genius) was suspended in favor of a tentative collectivity (the social group as artist)” (1992, 23).

<sup>93</sup> Emphases in the original.

encounter” (2008, 14). The encounter between visitors and exhibition. From this perspective, the concept of open interpretation also echoes Staiff’s ideas on heritage interpretation. Staiff highlights how: “By placing the emphasis on the performative, heritage interpretation is [...] the production of meaning by the visitors in their interaction with the place.” (Staiff 2014, 24). The meaning, then, is not generated by the museum, but by the interactions between the visitors *and* the museum, and these interactions become the key aspect in the visitors’ meaning generating process.

Finally, the idea of open interpretation resonates with Bennett’s description of the science museum of the future: “The very ambiguity of the objects, the unpredictability of visitors’ engagements with them, becomes in this account of the science museum’s future a virtue and a benefit” (J. Bennett 2000, 60). From this perspective, the *Science Museum in a Pizza Box* is a potential model for a new generation of science museums: museums based on open interpretation and thus multiplicity; museums that discuss the role of science in society while exploring how scientific meanings are constructed.

## ***Findings***

This study explored through practice an engaging and effective way to communicate science from a critical perspective, specifically through a guided tour that is a metaperformance. Such a metaperformance succeeded in actively involving its participants who performed science as cultural performance and critiqued the role of science in contemporary society. The participants did not simply reflect on science, but created new personal meanings through dialogues between themselves, with the performer and with the exhibits.

This study is innovative in its approach to its topic for three reasons. First, this study is interdisciplinary and connects museum studies, performance studies and science communication, and thus brings together different perspectives that complement each other. Second, this study is based on practice, in an effort to bridge the gap between theoretical research and museum practices. Such a gap is wide, particularly in the under-researched subject of the museum guided tour (see chapter 2). To this subject, the present study contributes an exploration of the figure of the tour



guide through the qualitative analysis of eight interviews (see chapter 3). Third, this study is innovative in its original combination of action research, performance and qualitative analysis.

Furthermore, during the experimentation, I have also investigated the use of word association games as a tool to detect changes in the participants' perceptions on science/scientists (see chapter 5). The word association games have proved to be a simple and fast instrument to explore the participants' entrance narrative and their final perceptions on science/scientists. This instrument has revealed that the performance succeeded in fostering a critical approach to science in many of the participants.

Finally, this study goes beyond the typical use of drama as a reference form for live performances in museum settings, experimenting with forms of participation that belong to the field of performance art. In particular, this study explores the use of strategies first developed by Allan Kaprow, proving the effectiveness of such strategies in fostering participation and in blurring the distance between performer and participants, and between science and everyday life.

The primary question that this study aimed to answer was: "How can a guided tour be an engaging and effective way to communicate with visitors about science?" The answer is that a guided tour needs to be a performance that integrates within itself the participants' entrance narratives, and that aims to entertain (Schechner 2002, 39) its participants. These two aspects of the performance intimately correlate: only when the performer knows the participants can the performer provide the participants with an entertaining performance. An entertaining performance is not a comic, or dramatic, or educative performance, but a performance that meets its participants' expectations. My experimentation shows that an entertaining performance is a mix of different elements (see chapter 5). A mix in which fun and interactivity play an important role, but a mix in which learning also has its place.

However, highlighting the entertaining nature of my performance is problematic in the relation between my performance and a guided tour. The idea that a guided tour should be an entertaining experience could be met with resistance not just by cultural institutions (see chapter 2), but also by tour guides. As one of the guides that Holloway interviewed points out: "You're a guide first. If there are 40 people sitting behind you, and only three of them are really interested in the facts that you're putting across, that's what you're employed for" (Holloway 1981, 386). Not every guide shares this opinion,

and through my interviews of tour guides, I have highlighted how different guides have different ideas on their role. One of the guides of my cohort pointed out how: “[My aim is] for the people to leave having enjoyed the tour. And if they enjoyed learning something, then that’s even better.” This tension between delivering information and providing enjoyable experiences is possibly in itself a definition of the tour guide. In this tension, my experimentation tips the balance towards entertainment for two reasons. First, in the contemporary entertainment market, characterised by participatory and personalised leisure activities, museums “must balance their own commitment to learning with their visitors’ usually more leisure-led, recreational frame of mind” (G. Black 2012, 39). Furthermore, as one of my participants recognised when reflecting on my performance, an effective way to learn is *through* enjoyable experiences: “I felt that it was a safe environment [...]. And you learn more when you are not worried. If you are enjoying the experience, you will learn.” My experimentation shows that if museums are serious about “their own commitment to learning” they should put at the centre of their experiences (including guided tours) the idea of entertainment: providing visitors with what visitors like is an effective way to establish the kind of relationship that is the base for any communication, learning included.

In my experimentation, the setting in which the performance takes place has a limited influence on the participants’ experience. By contrast, the number of participants is the most important factor in determining the course of the performance (see chapter 4). Single participant performances are intimate and effective in letting the participant be free to explore the exhibits in any possible way. However, it is with a group of five to six friends that the performance reaches its maximum effect. In such situations, the multiplicity of the opinions and the ease of the dialogues create a fertile ground in which the meanings are collectively elaborated. Performances with more than eight participants do not create the conditions that encourage the equal participation of everyone, and reduce the performance to a situation in which the participants are passive spectators. These results are consistent with my interviews of tour guides and my reading of the academic literature (Tsybulskaya and Camhi 2009), and they should prompt museums to consider what the appropriate number of visitors is for a guided tour. If museums are concerned with the participatory nature of the experience that they offer, they should consider offering guided tours with a maximum of eight participants. This choice would provide a customised experience for their visitors: an experience that

can be critical in ensuring that visitors return to the museum. As Ford explains: “In the end, the reason that visitors will return to the museum is because they see a part of themselves in it” (Ford 1997, 59). Clearly, guided tours with as many visitors as possible are an easy way to organise tours: the museums do not have to organise the booking, or to provide an extra guide if there are too many visitors. This way of organising guided tours privileges the number of the visitors over the quality of the visitors’ experience, and it is possibly the most cost-effective way to handle tours in the short term. It is not, however, a way to nurture the visitors’ participation, even in the medium term. It would be a better decision to invest in the quality of the visitors’ experiences, and to foster, over time, an affectionate community of returning visitors who can support the museum, and through word of mouth help the museum to attract new visitors.

My performance resembled, in some aspects, a guided tour. Specifically, during the performance I had a leading role that was analogous to the tour guide’s leading role during a guided tour (the “pathfinder” role identified by Cohen, 1985). However, my performance was different in one key aspect from a guided tour. As performer, I shared the position of knowledge-holder with the participants. The participants were essential to my performance not just because they chose the exhibits, but because they brought their knowledge and their experiences, and through their knowledge and their experiences the participants created the meanings of the exhibits. Performing the performance, the participants become the experts of their performance.

The rise of the participants as experts poses two related issues in a science museum. The first issue is the relationship between the participant and the scientific expert. The second issue is the relationship between the participant and the curator. Collins, in his recent book *Are we all scientific experts now?* (2014) strongly opposes the notion that everyone is a scientific expert, arguing that everyone should trust scientists because: “integrity is built into the very nature of science” (2014, 127). His argument is sound within the limit of his analysis, which does not contemplate the common nature of humans (scientists or not), and more importantly the hegemonic role that science has in contemporary Western societies (Bensaude-Vincent 2001; Erickson 2005; Feyerabend 1993; Wynne 2014). The question, specifically in the context of a science museum, should not revolve around who has the right type of expertise. The question should be about who is allowed to define her/his own life. The point is not a

conflict of expertise on science. The point is democracy. If a science museum is the cultural performance of science, which is “itself a social construct, which the whole society is involved in creating” (Erickson 2005, 3), then every opinion on science should have a place in a science museum. The participant is not an expert on science, and s/he does not pretend to be one. However, the participant is an expert in her/his own life, and from this perspective any participant is entitled to comment, critique and define what is science in her/his life.<sup>94</sup> As Weibel and Latour write: “The task of democracy today, then, is no longer to speak of minorities and majorities, of dominant opinion and deviant, but to respect the multiplicity of opinions in multiple public spheres” (Weibel and Latour 2008, 102). My performance did not generate single, officially approved interpretations of exhibits, but a joyful multiplicity of interpretations that resisted homogenisation. This was the aim of the performance, which set out to foster a critical approach to science and thus to fragment the idea of monolithic science (Bensaude-Vincent 2001). Nevertheless, for reasons linked with the recruitment of the participants and time constraints, this study failed in reaching a consistent portion of non-museumgoers, and from this perspective many voices still need to be added to the performance of the cultural performance that is called science.

The second issue that arises when the participant becomes an expert is the relationship between the participant and the curator. The question that surfaces as soon as the visitor becomes the one selecting the object and defining the meanings, is: “Do we still need a curator?”<sup>95</sup> Setting aside considerations about the management of the collections, I suggest that we need curators if curators can deliver guided tours. Curators are – at least in theory – a good option among the museum staff to deliver guided tours. They are supposed to have an extensive knowledge of the museum collection, and from this point of view they are well placed to answer any questions the visitors may have. Furthermore, curators should also be skilled in creating cultural representation such as exhibitions, and hence they can help visitors in deconstructing and critiquing

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<sup>94</sup> On the different ways in which science can be defined from a non-Western perspective see Maurice Bazin (1993).

<sup>95</sup> Also Reeve and Woollard reflect on a related issue: “[...] we ask whether more active audience participation and collaboration between the public and museum staff reduces the need for, or changes the role of, professional museum and gallery educators” (2015, 552). See Ken Arnold for a recent overview of the roles of curators in the contemporary museum (2015).

exhibitions. Having curators routinely delivering guided tours would signal the importance that cultural institutions place on every visitor, because instead of having underpaid, disrespected guides presenting the museum collection, there would be well-paid and respected curators.<sup>96</sup> A guided tour, when it is a performance, has the unique capability to directly engage the visitors, providing the museum with the opportunity to know its visitors, and the visitors with the opportunity to know their museum. It is thought-provoking to imagine that such an important communication tool could be handled by one of the most important figures inside the museum. Nevertheless, there is no guarantee that curators would have the indispensable communication skills to entertain the visitors. From this perspective, my answer to the question: “Do we still need a curator?” is inextricably linked with another question: “Do curators know how to be engaging and effective when communicating with their visitors during a guided tour?” We should consider whether we still need curators in museums if the answer to this last question is ‘no’, and if we think that museums are more than mere repositories of objects but social, public spaces in which the whole of society comes together to discuss and debate its past, present and future.

### ***Future practice and research***

My research worked in partnership with many cultural institutions, but it was not the creation of a science museum. An important step for the future would be to test more extensively the performance inside a science museum, thus potentially using the whole museum collection as a ‘Pizza Box’ from which the visitors could choose their exhibits. Such experimentation could clarify whether the approach that I propose would be an overwhelming experience for the visitors in a museum setting, as the visitor would potentially have the freedom to choose any object in the museum collection. Arnold, reflecting on the possible limitations of extensive virtual collections in which visitors create their own museums, suggests that visitors might prefer “the more ready-made

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<sup>96</sup> Curators typically guide around the museum only the visitors that curators consider most important. Visitors for whom, apparently, regular tour guides are not adequate. Madonna visiting the Uffizi Gallery in Florence through a personal tour delivered by a curator is just the most recent example I am aware of (“Madonna in the Uffizi” 2012).

experience of pitching up at the entrance of a museum” (Arnold 2015, 324). It would be only through experimentation that I could discover if, and under which limitations, my approach could be successfully adapted for a full-scale collection.

The overall amount of academic information on museum guided tours is limited, and it would be relevant to further explore the practice of the tour guide, given the potential to connect visitors and institutions that guided tours have. Furthermore, it would be important to develop tools to assess the quality of guided tours, and to better understand how museum guided tours shape the visitors’ experiences. From this perspective, the word association game that I have used in my experimentation could be a useful instrument that, given its results, deserves additional experimentation.

Other approaches should also be tested in the theory and practice of the museum guided tour. While I focused on an approach that had performance and participation at its core, the idea of play (Caillois 2001; Huizinga 1949) also appears promising in illuminating aspects of the visitor / tour guide relationship. For example, conceptualising visitors and guides as players of the same game could be another way in which to undermine the idea of the guided tours as “pre-planned didactic presentations” (Camhi 2008, 276).

Furthermore, while I used mostly audio interviews to evaluate my performance, it is possible that approaches like multimodal analysis (Jewitt 2009) could reveal important patterns in the non-verbal behaviours of visitors and guides, as Best (2012) has already partially highlighted.

Finally, my performance proved that it is possible with a few simple objects to create an engaging and effective experience to critically discuss science. The flexible and inexpensive nature of the *Science Museum in a Pizza Box* allowed me to change and transport my exhibits, and it could be a model for further experimentations that want to leave the museum setting and bring the metaperformance of the guided tour back into society.

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1	13	18-Nov-13	TePapa 1	meeting room museum	badge glow stick deck-of-cards sheep-skull	8							1			NZ
1	14	18-Nov-13	TePapa 2	meeting room museum	sweetener Petri dish badge rabbit/duck	7							1			NZ
1	15	20-Nov-13	E.D.	office	sweetener Petri dish glow stick deck-of-cards	1	1									NZ
1	16	24-Nov-13	C.G.	Museum WC&S museum		1	1									NZ
			OVERSEAS													
1	17	04-Dec-13	F.M.	office	presentation	1	1									UK
1	18	04-Dec-13	M.dG.	office	presentation	1	1									UK
1	19	05-Dec-13	R.W.C.	museum	presentation	1	1									UK
1	20	02-Jan-14	M.X.	museum	presentation	1	1									ITA
1	21	16-Jan-14	Royal Society	meeting room	rabbit/duck Petri dish glow stick sweetener	8							1			NZ
1	22	21-Jan-14	K.U.	private house	Petri dish sweetener sheep-skull glow stick	3		1								NZ
1	23	30-Jan-14	M.U.	private house	sweetener rabbit/duck deck-of-cards sheep-skull	5			1							NZ
1	24	4-Feb-14	Alpha Art 1	meeting room		6				1						NZ
1	25	11-Feb-14	Alpha Art 2	meeting room		5				1						NZ
1	26	13-Feb-14	C.C. Library	meeting room library	sheep-skull sweetener rabbit/duck deck-of-cards	4			1							NZ
1	27	20-Feb-14	Alpha Art 3	meeting room		4			1							NZ
1	28	27-Feb-14	Alpha Art 4	meeting room		8						1				NZ
1	29	24-Mar-14	Seniors	meeting room	sheep-skull sweetener rabbit/duck deck-of-cards	5				1						NZ
1	30	27-Mar-14	U.H. Library	meeting room library	sheep-skull rabbit/duck deck-of-cards Petri dish	4			1							NZ
			OVERSEAS													
1	31	28-Apr-14	Exploratorium 1	meeting room museum	Petri dish sweetener	8						1				USA
1	32	29-Apr-14	Exploratorium 2	meeting room museum	sweetener deck-of-cards	8							1			USA
1	33	29-07-14	C.C.U.	private house	sheep-skull Petri dish glow stick deck-of-cards	7						1				NZ
1	34	22-10-14	P.W.U.	meeting room	sweetener Petri dish deck-of-cards sheep-skull	5				1						NZ
1	35	30-10-14	A.I.U	office	Petri dish sheep-skull badge deck-of-cards	5					1					NZ

OVERSEAS											
1	36	27-11-14	E.I.&M	private house	sheep-skull deck-of-cards glow stick	3		1		ITA	
1	37	29-11-14	L&M	private house	sweetener maize sheep-skull glow stick	2		1		ITA	
1	38	04-12-14	Wellcome 1 (11am)	Reading Room museum	deck-of-cards sheep-skull glow stick sweetener	4		1		UK	
1	39	04-12-14	Wellcome 2 (3pm)	Reading Room museum	sweetener maize rabbit/duck glow stick	10			1	UK	
1	40	04-12-14	Wellcome 3 (7pm)	Reading Room museum	Petri dish deck-of-cards sheep-skull sweetener	4		1		UK	
1	41	05-12-14	Wellcome 4 (11am)	Reading Room museum	sweetener deck-of-cards Petri dish sheep-skull	4		1		UK	
1	42	05-12-14	Wellcome 5 (2pm)	Reading Room museum	sheep-skull glow stick Petri dish sweetener	6		1		UK	
1	43	05-12-14	Wellcome 6 (5pm)	Reading Room museum	maize deck-of-cards sweetener	8			1	UK	
1	44	10-12-14	Natural History M.	Staff room museum	deck-of-cards maize glow stick rabbit/duck	10			1	UK	
1	45	13-12-14	Leonardo	Thinkering Room museum	sheep-skull glow stick Petri dish rabbit/duck	9			1	ITA	
1	46	14-12-14	Leonardo	Thinkering Room museum	rabbit/duck Petri dish glow stick sweetener	2		1		ITA	
1	47	16-12-14	Olga Fiorini	classroom school	deck-of-cards Petri dish rabbit/duck glow stick	9			1	ITA	
1	48	16-12-14	Olga Fiorini	classroom school	sheep-skull maize rabbit/duck Petri dish	8			1	ITA	
1	49	19-12-14	Leonardo_Staff	Thinkering Room museum	deck-of-cards Petri dish	8			1	ITA	
1	50	19-12-14	Leonardo_Staff	Thinkering Room museum	Petri dish glow stick	8			1	ITA	
1	51	29-12-14	E.S.F.	private house	glow stick maize Petri dish deck-of-cards	10			1	ITA	
1	52	30-12-14	A.C.I.	private house	Petri dish maize glow stick rabbit/duck	1		1		ITA	
35	17	tot recorded					10	6	2		
		tot non-recorded					1	2	3		
		52 tot performances					4	5	6		
							260 tot participants	7	8	9	
							153 tot female (59%)	3	10	>10	1



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## Annex III – The performance in the press

SATURDAY, OCTOBER 19, 2013 | THE DOMINION POST



**Who ordered pizza?** Italian PhD student Michele Fontana is conducting a museum studies event that mixes a bit of theatre. Photo: KENT BLECHT/INDEPENDENT/FAIRFAX NZ

OUT AND ABOUT

## The pizza man delivers a bit of science

KERRY MCBRIDE

SOME pizza boxes contain more than just leftover crusts and cheese-flavoured regret, with a Victoria University student making them the centre of an experiment into everyday science.

Italian PhD student Michele Fontana, 37, is researching the relationship between museum studies and theatre, and exploring a new form of tour guiding to encourage visitors to share their own experiences.

He will be hosting two events on Wednesday at the Museum of Wellington City & Sea and hopes to involve visitors as much as possible.

"We have this idea that people go to the museum to learn something and it tells them what they want to know. But people already know a lot so I want to bring science closer to the everyday experience of people."

To tap into that knowledge, Fontana has gathered a collection of objects in a pizza box and intends to use them as props to help people share. Objects include a sheep skull, a deck of cards and a koru.

"The audience will decide which ones I will speak about, decide what they want to know,

### THE DETAILS

The Do It Yourself Science Museum is an interactive exploration of science and story. There are two shows on Wednesday at 12.30pm and 5.30pm at Museum of Wellington City & Sea, Queens Wharf. Free entry, limited to 10 people per show. For bookings, phone 04 472 8904.


and hopefully speak of their own interactions with that object," he said. "It's the idea that it's no longer people coming to the museum, but instead the museum coming to the people and letting them push the discussion."

As for the pizza box, it was chosen for two reasons, Fontana says.

"I'm Italian so it makes sense. But it's also something everyone already deals with. Making everyday science a bit more interesting by thinking about how normal objects represent scientific endeavours."

Some objects had particularly Kiwi connotations, such as the sheep skull, and Fontana hopes that will result in some interesting tales from the public.




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## Delivering science in a pizza box

Friday, 18 October 2013, 3:42 pm  
Press Release: Victoria University of Wellington

**MEDIA RELEASE**

18 October 2013

**Delivering science in a pizza box**

An international PhD student at Victoria University of Wellington hopes to revolutionise guided tours, with the science museum he has created inside a pizza box.

As part of his research, Michele Fontana who, of course, is Italian, will be presenting his portable museum through two guided tours at the Museum of City and Sea next week.

"The Museum of City and Sea is really keen on storytelling and experimenting with new ways of presenting information, so it's the perfect environment for my research," says Michele.

The pizza box will contain seven objects, ranging from a petri dish to a deck of cards. Participants will be asked to build their own museum by choosing the four objects they are most interested in and the order in which they wish to explore them.

"First I will ask people what they know about the object—for instance, in high school maybe someone used a petri dish and something went wrong. Then I'll tell them my story, about Louis Pasteur and how he discovered bacteria and how it's used for pasteurisation. In this way I try to build and connect everything around the audience."

Michele has been trialling his interactive method in private homes, and the museum 'tours' will be his first experience with larger numbers. He will also test his theory at the Newtown Community Centre and on senior citizens in retirement homes.

"My idea is to talk about science to people who don't usually go to museums, theatre or talks organised by scientific institutions."

Michele says he has interviewed a variety of tour guides in Wellington in the course of his research, including guides in museums, Parliament and libraries. He has found that although tour guides tended to feel undervalued within organisations, the experience they offer often leaves the most lasting impression on visitors.

"A good guided tour can influence your perception of the institution more than the exhibition itself."

In future, Michele aims to put the results of his research into practice by developing effective programmes for museum visitors.

Michele's PhD is divided between Theatre Studies and Museum Studies. He has degrees in Environmental Science (BSc, UNIMIB, Italy) and Science Communication (MSc, Imperial College, United Kingdom), and a background working in theatre and visual arts. In 2007, he won Prova d'Attore, an Italian national contest for actors.

**What:** *Do it Yourself Science Museum – in a pizza box*  
**When:** Wednesday 23 October, two shows – 12.30pm and 5.30pm (duration 50 mins each)  
**Entry:** Free (limited to 10 people per show)  
**Bookings:** 04-472 8904 or [museumtours@wmt.org](mailto:museumtours@wmt.org)

ENDS

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## Museum In a Pizza Box

11 October 2013

Coming to the Museum of Wellington City & Sea is the *Do It Yourself Science Museum* – a whole museum contained within a pizza box.

This unique show is an interactive and entertaining exploration of science and story. Your personal 'museum guide' will engage you with interesting facts and enthralling stories, and invite you to share your own stories and knowledge.



*Do it Yourself Science Museum is presented by Michele Fontana; a PhD student of Theatre and Museum Studies at Victoria University. In 2007 Michele won 'Prova d'Attore', the Italian National Contest for actresses and actors.*

*Limited to 10 people per show To book tickets, contact 04 472 8904 or email [museumtours@wmt.org.nz](mailto:museumtours@wmt.org.nz)*

**Location/venue:**

Museum of Wellington City & Sea

**Date:** 23 Oct 2013

**Cost:** FREE ENTRY


**Entry details:**

Limited to 10 people per show

**Contact details:**

To book tickets, contact 04 472 8904 or email [museumtours@wmt.org.nz](mailto:museumtours@wmt.org.nz)

Submitted by [Museums Wellington](#) on Fri, 11/10/2013 - 9:05am.



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 Wellcome Collection  
4 dicembre


Drop into our [#ReadingRoom](#) as we trial the new space today and tomorrow (last chance to see it until spring!)

You could come along to our pop up events...

\*Create a Science Museum in a Pizza Box with Michele Fontana (today 19.00-20.00, tomorrow 11.00-12.00, 14.00-15.00, 17.00-18.00)

\*Object/Archive (tomorrow 10.30-11.00)

...Or just explore the ten different 'niches' and soak up the atmosphere



Mi piace · Commenta · Condividi

👍 Piace a Rosie Stanbury, Lois Reynolds e altri 2.

“Perhaps the mission of those who love mankind is to make people laugh at the truth, to make truth laugh, because the only truth lies in learning to free ourselves from insane passion for the truth.”

Umberto Eco, *Il nome della rosa* p. 494 [*The Name of the Rose*, p. 491].