The role of the imagination in museum visits

Marianne Achiam

Abstract: *The imagination plays an important role in museums, today more than ever. Visitors use their repositories of imagination or* repertoires *to make sense of their encounters with objects and exhibits. In this article, I argue that this initial meaning making, rather than being the end goal of museum interpretation, should be thought of as the point of departure for further, more scientific meaning making. I present a framework developed by Colette Dufresne-Tassé* et al. *(2006) and show how it can be used to identify the variety of visitor repertoires at work in their imagination processes. I argue that becoming familiar with commonly occurring repertoires is necessary for exhibition designers in order for museums to continue to take their interpretive responsibility seriously, and I discuss how such a familiarisation may affect museum practice. I conclude with some perspectives on the implications of the framework for museum research.*

Keywords: Imagination, interpretation, repertoire, exhibition design, constructivism.

The imagination plays an all-important role in museums. In 1958, Katharine Beneker discussed the ability of exhibitions to "fire the imagination" of visitors, carrying them into new, previously unknown areas of knowledge. Today, this quality is perhaps more important than ever (Asma 2001:38ff., McLean 2007), as the traditional functions of museums are redefined and subsumed into new meta-functions (Dubuc 2011). Such meta-functions include a renewed perspective on museum education as engaging with content in a variety of tangible and intangible ways (Dubuc 2011), generating the conditions for the suspension of time and place by offering visitors new symbolic experiences beyond those constrained by buildings, ownership, or location (Beetlestone et al. 1998), and creating and reinforcing a sense of identity and culture in the face of the forces of globalisation (Knell 2011). These functions arguably entail the sparking and harnessing of the visitor's imagination, yet few studies have addressed the role of the visitor's imagination in their exhibition experiences (Bedford 2004, Dufresne-Tassé et al. 2006). Here, I present and discuss a framework for observing and describing the influence of the imagination on museum visits, and I argue for its utility in the

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design of museum experiences. Finally, I offer some perspectives on the implications of the framework. I take my point of departure in science and natural history museums, although I believe that the perspectives presented here have wider application.

Throughout this text, I view imagination as the essential capacity that enables us to form a mental representation of something (Gendler 2013). It allows us to see and think in new ways, and to create fictive situations and possibilities (Bedford 2004). Imagination is involved in the synthesis of new knowledge because it allows us to create mental constructions based on observation, existing knowledge, and what is not present (Greene 1988); it is thus central to learning (Sneath *et al.* 2009, Hadzigeorgiou 2015). It is distinct from memory in that imagining something does not require that something *to be* or to *have been* the case, whereas remembering something does (Gendler 2013).

Imagination and museums

In natural history museums in the late nineteenth and early twentieth centuries, the visitors' meaning making of the objects on display was thought to be governed mainly by the authority of those objects. In other words, the authentic scientific voice of the objects and their setting-in-scene in exhibitions constituted the authority of the imaginary processes (mental images, situations, and possibilities) that occurred in the visitor's interactions with the exhibition (Evans *et al.* 2002, Meszaros 2006). The presumed ability of the scientific objects to speak for themselves served to maintain the museum's authority to present the "truth" (Roberts 1997:60ff.), while ignoring the perspective of the visitor (Wertsch 2002).

In the 20th century, this object-based

epistemology (Conn 2010:7f.) was succeeded by a conception of meaning making as taking place in relation to the individual. In this new object-based *discourse*, the object's participation in the cultural or lived history of the visitor was thought to play a central role in the imaginative processes. This conception was based on a growing realisation that visitors brought their own, equally valid voices to the encounter, and that these voices were the basis of the meaning created in the visitors' experiences with the objects (Evans *et al.* 2002, Meszaros 2006). This perspective remains influential today among museum professionals (cf. Roberts 1997:60ff., Adams *et al.* 2003).

A disadvantage to shifting the interpretative authority from the museum and placing it in the hands of the visitor is that the scientific nature of the museum objects may be "relegated to a supporting part" (Evans *et al.* 2002:58). This is problematic, not just because it obscures the natural history or science of an object (Evans *et al.* 2002), but because it can be used in a wider sense to absolve the museum of interpretative responsibility (Meszaros 2006): If the museum has no control over the way visitors interpret the objects in exhibitions, surely it cannot be responsible for these interpretations? There are, however, problems with this argument. Even though most would agree with the basic notion that all knowledge construction is based on context and prior knowledge, this does not mean that cultural or scientific knowledge should be disregarded in the name of personal meaning. Nor does it mean, by extension, that any failure of the museum to communicate scientific content is justified (Meszaros 2006, Shettel 2008). Rather, it is important to acknowledge that the imaginative processing of museum visitors arises from a variety of *repertoires* which certainly include the visitor's existing knowledge, but also

Fig. 1. A diorama in the Natural History Museum of Denmark. The diorama features a deciduous forest habitat with a lynx (Lynx lynx) and a wild boar (Sus scrofa). Photo: Marianne Achiam, 2013.

Fig. 2. The discovery room at the Natural History Museum of Denmark. The discovery room features a number af taxidermied specimens of Danish and Nordic wildlife as well as other objects (e.g. skulls, bones, furs, and preserved invertebrates in jars). Photo: Marianne Achiam, 2013.

include the object's scientific nature, its specific affordances and setting-in-stage, the designer's intentions, etc. (Roberts 1997:137ff., Gurian 1999). What is lacking in a more current perspective, then, is a model that can link scientific knowledge to personal interpretation as a way of understanding how our imagination shapes our actions in designed environments in museums (Meszaros 2006).

With a point of departure in this observation, I now present an analytical framework, developed by Dufresne-Tassé *et al.* (2006), that describes and categorises the imaginative functioning of museum visitors. I exemplify the framework using an empirical data set, collected as part of another study (Achiam *et al.* 2014). Briefly, these data consist of observations and audio-recordings of visitors' *think aloud* verbalisations (van Someren *et al.* 1994) as they contemplated either dioramas (fig. 1) or animal specimens in a discovery room (fig. 2) at the Natural History Museum of Denmark. Six adults were observed

92 and recorded at dioramas, and six adults were observed and recorded in the discovery room. I use these data here, specifically the verbalisations, to illustrate the utility of the analytical framework developed by Dufresne-Tassé *et al.* (2006) in understanding how our imagination shapes our actions in museums and in identifying the repertoires that are involved in the process. Finally, I discuss how the framework can help museum professionals re-address their interpretative responsibilities and make visible and explicit the repertoires that shape their work.

Analytical framework

As outlined in the introduction, imagination is understood here as the capacity of visitors to evoke or represent something that is not with them in the exhibition, but that may be from the past, exist contemporaneously with the visit, be from the future, be potential or even virtual. In a study of 90 visitors to exhibitions at three different museums, Dufresne-Tassé *et al.* (2006) used the think aloud method (van Someren et al. 1994) to access visitors' mental processes. From the transcriptions of visitors' discourse, Dufresne-Tassé *et al.* constructed an exhaustive list of fourteen different kinds of mental operations. Of these operations, five do not require the use of the imagination, three require the use of the imagination, and six are possible both with and without the intervention of the imagination.

The first family of operations consists of *exclaim, observe, identify, verify,* and *judge.* These operations use only the cognitive or affective aspects of mental processing, and do not require visitors to use their imagination. Visitors either process information as a fact or express their reaction to what they see, as shown in the following examples:

When visitors *exclaim,* they express their reaction to an object with a simple expression such as "Oh" or "Wow". Their feelings are not articulated in a sentence, and the mental operation is purely affective.

When visitors *observe* or *find,* they essentially recognise familiar aspects of what they are looking at. For example, they might say: "There's a little beetle." Their mental operation is mainly cognitive.

When visitors *identify* an object, they assign it a name, establish its author, or establish the time of its creation. They usually do this using the label. Because the information is treated factually, their mental activity is primarily cognitive. For example, they might say: "This is a roe deer, with two lambs."

When visitors *verify* their own knowledge or observation, they check the accuracy of it. They take a factual approach, so their activity is usually cognitive. For example: "I guess it's nowadays, but I don't really…? (reads) Oh yeah! It's nowadays."

When visitors *judge,* they estimate or determine the value of what they are looking at by objective or subjective criteria. When the criterion is objective, the visitor's mental activity is usually cognitive, for example: "I can mostly hear the water instead of the animals." In contrast, when the criterion is subjective, the verdict is pronounced according to the visitors' personal taste, and their activity is mostly affective. Example: "I like the scenery of another Danish forest."

The second family of mental operations consists of *associate, predict,* and *suggest.* These operations require the use of the imagination; that is, they take place through the evocation or representation of something that is not with the visitor in the exhibition, but that exists in the past, present, or future, or even as a potential or virtual thing (Dufresne-

Tassé *et al.* 2006), as shown in the following examples:

To *associate* means that visitors connect what is being observed with information from their experience. They say, for example: "It makes me think about the south of Denmark, Møns Klint."

When visitors *predict,* they anticipate something that is yet-to-be, or just a possibility or hypothesis. For example, they might say: "Probably there are quite many ants [in that forest]."

When *suggesting,* visitors propose something outside their immediate context or they recommend a change in what they observe. An example could be: "There's this black slug; why did they decide to show that? I mean, it could have been ants on the ground, or small snails, or mosquitoes, or…"

The third and final family of mental operations consists of *justify-explain, resolve, compare, grasp, clarify,* and *modify.* These operations are possible without the use of the imagination, as the visitor may use the exhibition for assistance. However, as the following examples will show, the imagination is frequently involved in these operations:

When visitors *justify-explain,* they motivate, test or prove their position, using evidence to do so. Example without imagination: "I tried to listen for the birds, but there was too much noise at that point." Faced with a diorama of prehistoric Danish woodland, and using their imagination they might say: "It's different from the scenery that you would see today and the coastline. There's much more nature… it also seems quite undisturbed."

When visitors *resolve,* they find the solution to a problem. They reduce or remove an obstacle to further reasoning or the conclusion. An example that does not require the use of the imagination is: "I thought it was penguins,

at first. But it's another kind of bird (reading label)." An example involving the imagination is: "Is it a baby [roe deer]? No, it has to be an adult – it has horns."

When *comparing,* visitors establish the similarities and differences (and thus the relationship) between what they observe and something else. This "something else" may be located in the same place as they are; in this case, the activity does not require imagination. For example: "And again, in comparison with the sika next to it, how big [the wild boar] is!" If the comparison is made to something outside the visitors' vicinity, their mental activity requires the use of the imagination. For example: "The lynx looks kind of like a teddy bear."

When visitors *grasp,* they discover the meaning of one or more objects or the way they work, with or without the use of their imagination. Example (without imagination): "It's a pelican! Okay, interesting. I didn't know it was here [in Denmark]." Example (with imagination): "Oh, I actually thought they had larger tusks than that [about a wild boar]."

When visitors *clarify*, they invoke a new element, a feature that helps to deepen what they are able to say or do, with or without the help of their imagination. An example without the use of the imagination could be: "It gives me a romantic impression of life here; there are no dangerous things in it." An example which includes the use of the imagination could be: "I might miss some of the background for this; I mean, why did they end up living here, why did they die out, and how similar are they to the animals today?"

When *modifying,* visitors nuance or diminish either their position or their perspective. The activity can be carried out with the help of their imagination or without it. Example (without the imagination): "I don't really see

many other animals here, but there're quite a few beech trees. It's all beech forest, actually." Example (with the imagination): "And one of the first things is that it maybe looks like a seaside that I know, except for the fact that there are quite big animals."

How does imagination shape action in museums?

Dufresne-Tassé *et al.* (2006) use the analytical framework presented in the preceding to show that when visitors use their imagination, they spend longer time in museum exhibitions, and have richer and more fully-developed interactions with the objects in them. According to these authors, this effect is due to an enrichment of the semantic universe created by the visitor around the object. Dufresne-Tassé *et al.* (2006) further observe that the imagination plays this role, sometimes through its reproductive component, sometimes through its creative component.[1] The reproductive component is at play when visitors *associate* or use their imagination to *compare,* because they are linking what they observe with what they already know or have experienced (cf. Dufresne-Tassé *et al.* 2006). In the example of association shown above, the visitor says about a diorama "It makes me think about the south of Denmark, Møns Klint", retrieving from their memory the characteristics of Møns Klint.

Conversely, the creative component is at play when visitors use their imagination to *predict, suggest, justify-explain, resolve, grasp, clarify,* or *modify,* because they are creating mental scenarios (cf. Dufresne-Tassé *et al.* 2006). In the example of suggestion shown above, the visitor says about a diorama: "There's this black slug; why did they decide to show that? I mean, it could have been ants on the ground, or small snails, or mosquitoes, or…"

In this case, the visitor is mentally producing a scenario of a different diorama, suggesting that this imaginary diorama is as valid as the observed one.

In sum, the reproductive component of the imagination mainly serves to integrate what is shown in the exhibition with the visitor's experience, while the creative component of the imagination is largely responsible for the deepening, structuring, and enriching of the universe of meaning surrounding the objects in the exhibition (cf. Dufresne-Tassé *et al.* 2006). The authors propose the mechanism of imaginary functioning to be the following:

Imagination promotes first a personal contribution, an initial investment through which a formal relationship is established between the object and the information held by the visitor (reproductive imagination). This establishment situates the object […] and creates a first level of familiarity with it. With the aid of this familiarity, visitors can more easily carry out other types of investment, enriching, deepening, strengthening and structuring the universe of meaning they create (creative imagination) (Dufresne-Tassé *et al.* 2006:172, my translation).

The mechanism proposed by Dufresne-Tassé *et al.* (2006) is consistent with a constructivist perspective of learning: A process of construction based on a person's prior lived experiences and understandings as well as the ways in which that person actively interacts with the world around them (Hadzigeorgiou 2015). The imagination is thus a kind of meaning making "engine" because it drives the initial reproductive establishment of the relationship between the object and the visitor by synthesising a conscious conception of what is seen, and the subsequent creative mobilisation of the person's background

beliefs, memories, and expectations in order to create what is not seen. Taken together, the notions of imagination and constructivism thus explain how museum visitors' various repertoires influence their processes of meaning making in exhibitions. In the next section, I will develop the notion of repertoire, and show how the analytical framework can help museum professionals identify the repertoires at work in the interpretative work of museum visitors.

REPERTOIRES AND THEIR INFLUENCE ON THE IMAGINARY PROCESS

Repertoires may be understood as visitors' repositories of meaning making, that is, the knowledge, experience, assumptions, and conjectures that underlie their interpretation of objects and exhibitions. Although they are involved in creating a conscious conception of sensory input, the repertoires themselves are mobilised somewhat unconsciously by visitors, which makes them difficult to observe and identify. Yet, as Meszaros (2006) states, we as museum professionals cannot ignore them because they are powerful shapers of the interpretative process.

I suggest that the analytical framework developed by Dufresne-Tassé *et al.* can be used as a means to identify and observe repertoires in action among museum visitors, because the framework allows us to identify mental operations that involve imaginary processing, and because at the foundation of this imaginary processing, we find repertoires. Consider the following examples: Facing a diorama featuring a forest with a roe deer, one (male) visitor says: "It's more, like, species for hunting you see." This visitor is carrying out an operation of association, using his imagination in a reproductive way to identify the deer as a common object of recreational

hunting in Denmark. Clearly, he is drawing on a repertoire of his own personal experience (perhaps he is a hunter himself) to make this statement. Conversely, another (female) visitor facing the same diorama states: "I get a lot of questions or stories that could have been told, but aren't part of the picture. I mean, how old do they get, what do they eat, who will eat them, and so on. Eh, there are a lot of stories, but untold." This visitor is carrying out an operation of suggestion, using her imagination in a creative way to propose potential "stories" that in her opinion ought to have been addressed by the diorama. This visitor clearly draws on a repertoire regarding her perception of the educational obligations of a natural history museum. In both cases, the visitors use their imagination to make meaning of the encounter, and in both cases, the visitors draw on their individual repertoires as well as the observable features of the diorama in this meaning making.

In sum, I suggest that the analytical framework developed by Dufresne-Tassé *et al.* (2006) can be used as a means to identify instances of imaginary functioning among visitors; instances that can then be interrogated to clarify the embodied repertoires. This process, I suggest, is part of the collective task of museum professionals outlined by Meszaros (2006): Becoming familiar with the many kinds of meaning making repertoires so we can attend to their power over us. In the following, I contextualise these arguments and discuss their implications for museum practice at the levels of visitor meaning making, exhibit design, and the reflective practices of museum staff members.

DISCUSSION

I have argued for a renewed focus on the dissemination responsibilities of natural

science museums. Although to many readers it may seem self-evident that museums should take responsibility for the scientific meaning making their exhibitions engender, past decades have seen a shift, within both museum research and practice, away from the intellectual interaction between the visitor and the exhibit (Meszaros 2006, Shettel 2008). Indeed, one of the most influential (cf. Phipps 2010) conceptual frameworks in museum research, the Contextual Model of Learning (Falk & Dierking 2000, 2013), describes the museum experience without reference to the content of what is exhibited or the imaginative trajectories made possible by that content. Although it was never the intention of Falk and Dierking (nor of constructivism) to celebrate personal meaning making to the *exclusion* of scientific or cultural knowledge, the framing of the museum experience as a strongly personalised event may inadvertently have contributed to the exile of cultural or scientific knowledge from the collective consciousness of museum researchers and practitioners. This is what Cheryl Meszaros refers to as

the highly selective uptake of constructivist learning principles that […] prioritizes personal meaning-making as the end product of the museum encounter rather than the beginning of interpretation (Meszaros 2006:13).

It is against this backdrop that my proposal should be read.

What would it mean for museums to fully take on the task of interpretative responsibility? First of all, it would mean that rather than accepting whatever initial meaning a museum visitor makes of an encounter with an object or exhibit, the museum should view this meaning as the point of departure for further, scientific meaning making. By identifying the kinds of repertoires commonly employed by visitors, museum professionals would become better able to predict and accommodate visitors' various points of departure and thus to plan for their further experiences, helping them make scientific meaning of the content matter (cf. Hein 2006).

Second, there is evidence to suggest that exhibit genre acts as a significant prompt of visitor response (Macdonald 2007, Pedretti 2012, Achiam *et al.* 2014). For example, the diorama is an exhibit genre intended to illustrate the natural interactions between the animals, plants, geography, and climate of a given biome (Fortin-Debart 2003, Marandino *et al.* 2015) and indeed, it seems that visitors in many cases are prompted by dioramas to act as naturalists, observing the behaviours and relationships on display and drawing on their ecology repertoire to interpret what they see (Ash 2004, Reiss & Tunnicliffe 2011, Piqueras *et al.* 2012). For example, Piqueras *et al.* (2012) report how a diorama showing scavengers at a deer carcass embodies an explicit curatorial intent to challenge the curiosity and imagination of the visitors by including "clues" to the main scene. Accordingly, the designers have placed yellow spots and footprints on the diorama's artificial snow; these are signs of a fox that has previously visited the carcass and taken away its head (a common behaviour among foxes). In their study of visitors' meaning making at this diorama, the authors show how these clues and details indeed do trigger visitors to conjecture about which animal killed the deer and took its head, using and building upon their existing ecology repertoire. I suggest that understanding the relationship between an exhibit genre and the visitor repertoires it tends to mobilise is an important step towards improved museum interpretation, because it allows exhibition designers to better take

advantage of the "distinct ways of mediation of the genre in question" (Achiam *et al.* 2014:478).

Finally, I observe that although the focus here has been on the repertoires of museum visitors, it is easy to imagine how the repertoires of exhibition designers can be powerful co-authors of how and why an exhibit or exhibition takes a given shape. Lindauer (2005) showed how exhibition designers have rather tacit ways of approaching exhibition design; ways that are not always consistently applied across the design team or even by the same individual. To the extent that we can think of these design approaches as being governed by the repertoires available to the designers, we can see how repertoires indeed do influence the design process. Acknowledging that museum professionals make assumptions about science content and science education when they produce educational environments and activities, even if these assumptions are tacit or inconsistent with one another (cf. Lindauer 2005, Mortensen 2010), is an important step towards understanding what kinds of repertoires underlie these assumptions and deciding whether they contribute to producing the desired characteristics in the final product. Ultimately, this will lead to more well-reflected design practices.

Conclusion and perspectives for research

In conclusion, I find that the framework of imaginary functioning (Dufresne-Tassé *et al.* 2006) combined with the notion of repertoire (Meszaros 2006) offers a tool to help identify and understand the imaginary processes of visitors in their interpretive work, and ultimately, to contribute to a better alignment between this interpretive work and the goals and objectives of the museum. Present-day museums rely on mobilising the imaginary processes of their visitors to fulfil their new institutional meta-functions and must accordingly renew their efforts to address their interpretive responsibility; the perspectives presented here offer one way of doing so.

From a research point of view, I note that although the notion of repertoire originated in an art museum context (cf. Knutson & Crowley 2006), it has similarities to constructs from other research domains, no doubt due to shared constructivist origins. For example, from a science education research context, Stocklmayer and Gilbert's (2002) notion of "remindings" as the ideas, objects, events, or processes that shape a visitor's exhibit interaction seems to have similar implications. And from a tourism research perspective, Voase (2002:391) observes that when visitors encounter a museum attraction, the meaning they make is shaped as much by their own memories, interests and concerns as by the encounter. It seems, then, that the constructivist notion that visitors make their own meanings in museums is broadly accepted in the research community (even if it is sometimes selectively applied). This prompts the final question: What is our role as researchers in furthering an agenda of re-addressing "interpretative responsibility" in museums?

As researchers, our role is probably not to be the agents of change in museums. Our strength lies in being able to step outside the educational system under investigation, and we are thus not obliged to take for granted the existing organisation of a scientific subject or theme as it is represented in an exhibition, as if it were the only one possible. This position gives us a unique opportunity to help identify and challenge occurrences of unspoken, unseen repertoires from which acts of interpretation arise, whether they originate among museum

98 staff and manifest themselves in exhibition design, or among visitors, where they shape the ways in which meaning making can take place. But we can only assist and inform the (r)evolution of museums; the true agents of change must be the museum professionals (cf. Heimlich, 2006) who have the power to radically re-think their practices.

Notes

1. Dufresne-Tassé *et al.* (2006) draw on Kant when they discuss the reproductive and creative components of the imagination. While their interpretation of Kant does not, strictly speaking, align with my understanding, I retain their Kant-inspired idea of distinguishing between the reproductive and creative components of imagination due to its practical applicability.

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Marianne Achiam, Ph.D.
achiam@ind.ku.dk

University of Copenhagen
Department of Science Education
Øster Voldgade 3
DK-1350 Copenhagen, Denmark
http://www.ind.ku.dk