Science centres and museums

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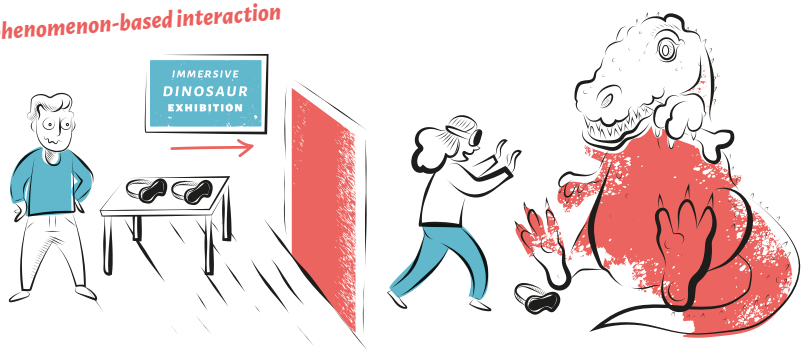
UNLOCKING CURIOSITY: FROM *wonder rooms* TO *phenomenon-based interaction*



The history of science museums and science centres dates back to the 16th century with the emergence of cabinets of curiosities. In these hodgepodge collections of disorganised rarities, the desire to disseminate knowledge to a wider public was born. The idea gained further traction during the 19th century: The upheavals of the Industrial Revolution meant that natural sciences and technology gradually became more prominent as they increasingly influenced people's daily lives. This resulted not only in the first world's fair, the Great Exhibition of 1851 in London, but also in the emergence of natural history and science museums.

To this day, these temples of science house enormous collections representing the diversity of flora and fauna and of technological and scientific achievements. As well as being on display to the public, they are the backbone of original research.

Science centres only emerged in the second half of the 20th century, with the Exploratorium in San Francisco often being regarded as their pioneering archetype [44], although it borrowed many innovative features from precursor European institutions (Urania Berlin, the Deutsches Museum Munich, the Children Gallery of the Science Museum London, the Palais de la découverte Paris [45]). Unlike traditional science museums, science centres prioritise

visitor engagement with natural phenomena and technological principles through the presentation of hands-on exhibits and interactive activities.

Science museums and science centres both pursue an educational purpose. As places of informal learning [46], their primary goals are to engage, educate and inspire the public about science and its relevance to everyday life. Through engaging exhibits, interactive workshops, live demonstrations and educational programmes, science museums and centres aim to foster scientific literacy and critical thinking and to nourish the visitor's curiosity about the fundamental principles that govern the world.

Comparing the ways in which knowledge is communicated in both types of institutions, it can be seen that the boundaries are blurring: In recent years, numerous museums have embraced interactive exhibits as an integral component of their educational approach. Conversely, the principles of museum pedagogy and scenography have found their way into the communication strategies of many science centres. However, their didactic concepts still rest on two different foundations: the preservation and display of original collections on the one hand, and the immersive experience (see illustration) of phenomenon-based exhibits on the other.

Apart from their collections and exhibitions, the success of science museums and centres often depends on the personal interaction of visitors with scientific mediators, who act as the missing link between the often deep and complex scientific phenomena and the public. Rather than being as exhaustive and precise as possible, their goal is often to spark emotions and inspire curiosity when interacting with visitors, while still being scientifically accurate [47]. In this sense, while science museums and centres strive to captivate audiences, it is crucial to ensure that they don't become mere playgrounds where lab coats are handed out as dress-up costumes, leaving little room for scientific depth.

Recommended reads:

- Falk J.H. & Dierking L.D. (2011), *The museum experience*, Howells House. ISBN: 0-929590-06-6 ; https://doi.org/10.4324/9781315417899
- Schiele et al. (2015), *Science communication today-2015 - current strategies and means of action*, Presse Universitaire de Nancy. ISBN: 978-2814302365
- Wagensberg J. (2007), Cosmocaixa: *The Total Museum: Through Conversation Between Architects and Museologists*, Sacyr. ISBN: 978-8461126248