

On the Elusiveness of Interactive Objects

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PROLOGUE

The object we bring is a thick disk from Polyurethane resin with embedded NFC technology (Fig. 1). A dry description for the poetic role we intend it to have: a companion object that, via physical manipulation, heightens the visitor experience at a heritage site and facilitates a personal connection to curated content (Fig. 3). It has a primitive form, a “pebble”, evocative of Forte Pozzaccio (Werk Valmorbia), a completely in-cave three-storey fortification built by the Austro-Hungarian army at the outbreak of WWI and now in the Italian Alps (Fig.1). Initially designed for visitors to the fort, the bespoke installation (Fig. 3) is now in the WWI artillery gallery (part of the Museo Storico Italiano della Guerra) hosted in a bomb shelter dug into the mountain backing the Italian city of Rovereto in WWII.



Figure 1. The ‘pebbles’ (left) with engraved altitude lines and the 3-points artillery place symbol of Pozzaccio (right).

At arrival, visitors receive a pebble to activate multimedia content at four stations along the trail (Fig. 3). Each pebble contains an NFC read-write tag that logs the visit and

controls, at the exit, the print of a personalised postcard (this in turn enables the visitor to access personalised content online).



Figure 2. The construction of a station and a detail of its top.

The stations (Fig. 2) are built in steel that rust with time and use; on the top a number of cups in machined Acetal accommodate the pebble and hide the NFC reader-writer. Each station has a theme: the fort today, its construction and dismantlement (Fig. 3 left), its effect on the villages close by; and the diaries of the soldiers of the opposite armies that lived and fought in the fort (Fig. 3 right). All content is in the form of personal accounts and thus each cup on each station is marked with a date, a name, and a role in the overall story of the fort (Fig. 2). The content was curated and prepared by the museum using material from their historical archives including maps and plans, photos, war journals and personal diaries; professionals (actors, directors, and graphic artists) were then involved for the final rendering. The pebble acts a transition object for the exhibition. The experience and comments from visitors <https://www.youtube.com/watch?v=IqucGK9BlcI&feature=youtu.be>



Figure 3. The station with the story of the fort (left) – the narrative is accompanied by a hand-drawn white on black animation; the video portrait installation where soldiers of enemy armies recall their experience of the same battle.

The pebble is then just one element of a more complex ecosystem of technology, materials / products, and digital content all designed to work in synergy for the final effect of an immersive and evocative experience. It is the result of a co-design and co-creation process that involved a multidisciplinary team (interaction and product designers, computer scientists, and museum curators) from the early idea generation to the installation and evaluation [4].

From a research point of view [1], the installation of Forte Pozzacchio is one in a series of field studies aiming at understanding how a physical and embodied interaction affects and changes the experience of visiting heritage [5]. Key to our research is the concealing of the technology, the respectful intervention in sensitive contexts; and a design that can be used by everyone.

WORKSHOP QUESTIONS

Materiality – What are the material qualities of interactive and physical designed objects?

Digital technology is shapeless: as electricity, it needs a medium to become perceivable [2]. The possibility to materialise the digital are then endless, and many are the qualities designers should take into account, all depends on the final goal: (i) the pebble itself, its mass and weight gives it a definite presence; the touch when holding it feels good, smooth and warmth; (ii) the station and its sympathetic fitting with the environment brings to mind aesthetics features, but also hardness and water-resistance; (iii) the content and its emotional delivery that includes the medium (projection vs. screen), but also visual qualities such as white on black drawings projected on a black sheet at to appear from nothingness (Fig. 3 left) or the projection of the video portraits on large white canvas frames (Fig. 3 right) as to evoke confession and intimate talk.

Process – What role do material objects have during the design process? In what ways can material outcomes offer insight into the design process from which they emerged?

The many prototypes developed during the process were both tools to discuss progression within the curatorial team as well as ways for the designers to ‘feel’ how and where the design was going. Choices presented here as final, e.g. the white on black drawing and the video portraits, emerged as part of team discussions with prototypes in situ. As the work presented here was to be installed and use in place, it was vital to gain a feeling early in the process. However, the materiality of the prototypes was very poor respect of the final version: in place we tested more the ideas and the overall sense of place. In this sense it is very difficult, if not impossible, to see how the process came about by just considering the object(s). Too much is missing.

Quality of outcomes – In what ways can we judge the quality of designed objects?

The quality of the outcome does not lie in the object itself, but in the poetic it acquires when seen / used in context. As

a product of research, its quality cannot be appreciated unless the process of designing and making is made explicit. However as a design product, it has a value in itself irrespective of the process and the research behind.

Material knowledge and physical rhetoric – What ways of understanding material outcomes as their own non-verbal or less verbal forms of knowledge or rhetoric are possible?

The sensorial / embodied experience is what makes the connection at first. The knowledge and understanding is rooted in the visceral experience of holding the pebble and being there (embodiment), but then progresses at a behavioural level with the action of selecting the content by “using” the pebble and finally the reflective level of understanding how the fragments of the many lives combine together to give a full picture of the role of the Forte in the war and in the life of those around it [3, 6]. The three (visceral, behavioural and cognitive) are related and they build upon one another.

Insights into practice – What can a discussion of things teach us about the practice of designing, producing, and presenting them—as research or otherwise?

Where good design practice ends and where design research begins is not clear-cut. Good design practice is always the outcome of research and design research always uses knowledge derived from design practice, e.g. the touch of a certain material - vs. another – its shape – vs. another. Object, process, practice and designer are intertwined and cannot be understood in isolation. A further element of complexity are the different types of design involved: product design deals with the physical embodiment of the object, interaction design deals with its behaviour.

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