# Aspects of Lifelikeness: A Framework for Optional Interactions with Public Installations

**Ingi Helgason**
Centre for Interaction Design
Edinburgh Napier University
10 Colinton Road
Edinburgh EH10 5DT, UK
i.helgason@napier.ac.uk

**Michael Smyth**
Centre for Interaction Design
Edinburgh Napier University
10 Colinton Road
Edinburgh EH10 5DT, UK
m.smyth@napier.ac.uk

**Chris Speed**
ESALA, Edinburgh College of Art
The University of Edinburgh
Lauriston Place
Edinburgh, EH3 9DF, UK
c.speed@ed.ac.uk

**ABSTRACT**
This poster presents a framework for the design and evaluation of "optional interactions" with publicly sited, non-utilitarian installations. These kinds of encounters, where an engaging experience of interaction itself is the design goal, can be regarded as forms of dialogue between people and interactive systems. The framework that is visualized in this poster extends this dialogical model by incorporating system features that suggest aspects of "lifelikeness", whether human, animal or undetermined, to the user. These aspects are categorized as *animate* or *sentient*, referring respectively to their physical and behavioural attributes, or to their apparent intelligence. It is proposed that these aspects may prove to be useful in the design of public installations; as attractors to initiate interaction, and as sustainers, to support engagement with the system. It is also proposed that the framework can be used to inform evaluations of installations sited in public spaces.

**Author Keywords**
Public spaces, interactive installations, optional interaction, interactive art, engagement, experience design, lifelikeness.

**ACM Classification Keywords**
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## INTRODUCTION
The framework described in this poster addresses the design and evaluation of installations that entice passers by to approach, rewarding these users by delivering engaging experiences. This framework is being used to structure on-going research into the experiential aspects of engagement with interactive systems, where the interaction with the system is an end in itself. Users in this situation can be described as being in action mode rather than goal mode [2] as they are acting spontaneously, and in response to the system.


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### Optional, Engaging interactions
Designing such systems poses particular challenges, and this poster proposes a framing of such interactions that draws comparisons with interactions created by artists working in the medium of digital interactive art, and in particular with artworks that present themselves as some form of living being. This "lifelikeness" may include features implying *animate* aspects of the systems, such as animalistic movements, or there may be features present that suggest *sentience* and independent agency.

The design of devices and appliances that display life-like qualities, often for use in domestic or workplace settings, is a growing area of research, emerging from the field of affective computing [6]. One such example, *The Thrifty Faucet*, is presented by Togler and colleagues [8]. This kinetic device is deliberately abstract in design, yet retains zoomorphic and anthropomorphic qualities that encourage an emotional reaction from the user.

## THE STUDY OF INTERACTIVE ARTWORKS
The initial idea for this framework was inspired by study of the work of artists working in interactive media. It was noticed that many engaging interactive works could be categorized as presenting one or both of the *animate* and *sentient* aspects. Golan Levin's 2007 work *Opto Isolator II* [5] "presents a solitary mechatronic blinking eye, at human scale, which responds to the gaze of visitors with a variety of psychosocial eye-contact behaviors that are at once familiar and unnerving." In contrast to these *animate* aspects of an artwork, David Rokeby's work *The Giver of Names,* [7] seems to the viewer to exhibit *sentience* by delivering apparently intelligent, textual responses to the physical arrangement of objects placed by the gallery visitor.

## SCOPE AND SETTING: PUBLIC SPACE
The discussion here encompasses encounters with technological systems that take place in any public or semi-public environment, such as museums, galleries, shopping centres, streets and foyers. Interactive, walk-up systems are no longer novel in public settings. City dwellers are now habituated to handing over cash and credit cards to automated machines for the purchase of train tickets, car

parking tickets, cinema tickets, and even for self-scanned supermarket purchases. All these tasks are achieved with the helpful guidance of an interactive system that has been designed to help people manage the process in as seamless a manner as possible. This familiarity with screens and kiosks has created some challenges for the designer of enticing, optional, non-utilitarian installations. A bright touchscreen is no longer an interesting novelty that promises an engaging experience, instead it has become a signifier of a place to carry out a necessary task. Human Computer Interaction (HCI) has provided a rich array of evaluation techniques and methodologies that address the usability issues of such task-based systems. However, as content and experience-based interactive installations have become more common in public settings such as museums and city streets, researchers have increasingly been investigating how to assess and evaluate their success [3,4].

## ENCOURAGING INTERACTIONS: ATTRACTING AND SUSTAINING

The framework described here has been devised with a view to understanding and informing the design of engaging interactive systems that both initiate and sustain experiences that are highly regarded by the participant. In a walk-up type of system it is useful to consider interaction as a series of temporal phases. Edmonds et al [1] classify engagement phases in an interactive art gallery context as belonging to three main categories; firstly there are the attractors, aspects of the system that encourage the audience to approach the artwork, secondly there are sustainers, aspects that keep an audience engaged for a period of time, and finally there are the relaters, aspects that encourage an ongoing relationship with the work.

### Temporal Phases and Lifelike Aspects: Mapping

In this framework, the attraction stage and the sustaining phase are addressed. It is suggested that there could be a mapping between these two phases and the two aspects of lifelikeness previously discussed. To illustrate this, a case study example of an interactive screen-based application developed for an exhibition is used (see Figure 1). The initial attraction phase maps onto the "animate aspects" of the application; in brief, this application presented the captured facial image of the viewer in response to the detection of their presence. The image of the human face attracted visitors to look at the screen. The sustaining phase then maps to its "sentient aspects"; the viewer is then presented with fictional, text-based personal data that implies knowledge or intelligence on the part of the system. By sustaining engagement in this second phase, the aim of this work was to encourage visitors to reflect on the capture and presentation of personal, biometric data.

Currently this is early, exploratory work, and future stages include utilizing the framework to inform the design and evaluation of new systems in practice.

**Figure 1. *This Pervasive Day* Face Detection application.**

## CONCLUSION

By presenting an explanatory visualization of the "lifelikeness" framework, this poster aims to generate discussion around the appropriateness of this idea for influencing the design and evaluation of interactive installations. Future work will include the use of the framework to inform the design of a creative application intended for publicly sited touchscreens. The framework is also currently being used to evaluate existing installations, and will be refined in the light of these findings.


## ACKNOWLEDGMENTS

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