



Brass Art TouchAR

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TouchAR is an Augmented Reality artwork made for Apple and Android mobile devices. *TouchAR* invites the user to download the free app to activate images with animation and sounds. These include tracking butterflies, a leaping locust, an inhaling lung, and fingers of flame that invite repeated fingertip touch. The auditory aspects of *TouchAR* mix live capture of the artists' voices with field and studio recordings to create electroacoustic soundscapes. The artwork brings together three-dimensional copies of the artists' hands with collaged imagery drawn from environmental regeneration, the *Tapestry of the Apocalypse*, (made in Angers in the 14th century), and historic, anatomical, and cosmological illustrations. The AR system was developed in Unity (during the Covid19 lockdown 2020-21) with the AR Foundation SDK utilising a combination of image and plane detection to augment each printed digital artefact. The artists use technology to suture analogue and computational art making, to explore ideas of touch and engagement with ecology in a technological society and address the deep past, present challenges and possible futures. *TouchAR* offers an embodied experience with AR as a means of enchantment.

Keywords augmented reality,
embodiment, interaction,
art, uncanny, wellbeing,
worlding, environment

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Fig. 1. *Brass Art: TouchAR* (2021) Installation detail, vinyl prints installed on glass, Castlefield New Art Space, Wigan. Dimensions variable. Image credit Brass Art.



Introduction

Brass Art was commissioned by Turnpike Gallery (UK) to develop a bespoke AR app for interactive artworks in Wigan and Leigh, UK (2020-21). The Augmented Reality (AR) artwork *TouchAR*, is designed for Android and Apple devices. The *TouchAR* app triggers animations and sounds to augment original collaged images created by Brass Art. These appear as posters, billboards, and vinyl decals in urban and rural spaces. The images reflect the creative and collaborative approaches the artists took to site, technology, ecology, and gesture in their production of artworks for the public realm during the Covid-19 pandemic.

The intrinsic purpose of the commission was to test the artistic potential of AR in the public realm at a time of social isolation and to simultaneously explore the role and importance of touch in the context of a global pandemic through the use of touch-screen devices. The interactive artworks are devised to encourage hope, highlight meaningful environmental change in a hyper-local context, and draw attention to multiple aspects of the post-industrial environment, including its historic past and possible futures. In this sense *TouchAR* reflects contemporary ecological global concerns.

TouchAR

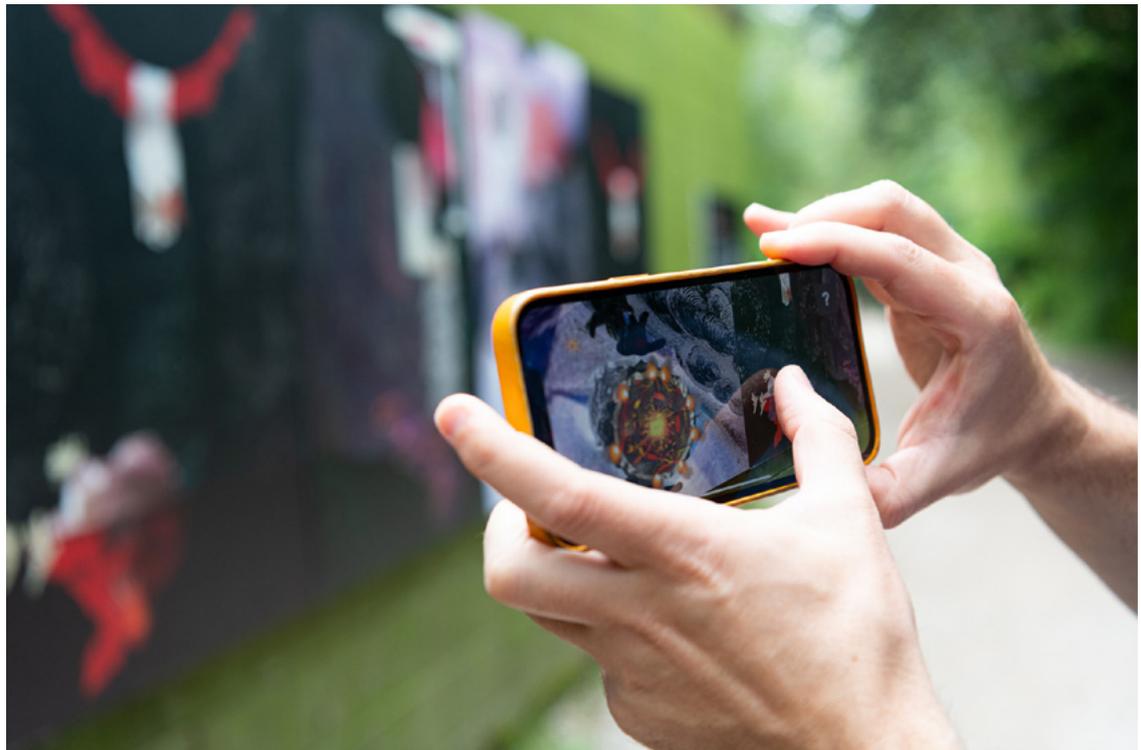
The *TouchAR* app uses an AR system developed in Unity with the AR Foundation SDK which recognises a number of image markers in the artefact, whilst also being aware of the surrounding planar surfaces. Both the image markers and the planar surfaces are augmented with virtual objects and related visual and

auditory experiences. The segmentation of larger areas allows the users to experience the artwork up close and at a distance. Working in AR enabled Brass Art to experiment with two kinds of highly detailed original 3D scan data: first their captured hand gestures¹ and second, mineralogical specimens² sourced from Manchester Museum. Through their sculptural approach they also translated 2D representations of hands and historic illustrations into digital 3D models. Through the app, all of these elements convincingly emerge from the 2D surface of the collaged images.

1. *TouchAR* extends the computational use of cloud data harnessed during the commission Brass Art *Gestured* (2017) <https://brassart.org.uk/Gestured>

2. Brass Art *Still Life No. 3* (2019) <https://brassart.org.uk/Still-Life-No-3>

Fig. 2. Brass Art: *TouchAR* (2021) public interaction with AR artwork, Pennington Flash Nature Reserve, Wigan. Image: Livia Lazar.



In *TouchAR* the hands stand-in for the artists. They use them to suggest agency, power, control, and their opposites. The hands reach out and they offer up virtual objects for contemplation which hover magically in their midst or unfold upon further investigation. With the touch of a finger, users can animate an engraving of the sun's imagined surface, or the earth's fantastical interior, both photographed from original 17th century scientific textbooks by Jesuit polymath Athanasius Kircher³. His vast range of knowledge and scientific speculation included research into electro-magnetism, bioluminescence, geology, weather systems, eclipses, herbs, and the use of early microscopes. The juxtaposition of these elements in his treatise created a visually rich collection to consider in relation to the artists' own sensing bodies in space and subsequent utilisation for this interactive artwork.

In relation to Brass Art's ongoing collaborative practice the artists consider the unconscious call and innate power of objects (Brass Art, 2020; 49-64), and how AR enhances the affective dimension of the uncanny. The animation of the

3. Brass Art have a long-standing interest in Athanasius Kircher and photographed *Mundus Subterraneus* (1678) at Chetham's Library, UK during an Arts & Heritage commission.

AR objects, insects and disembodied organs suggests a vital force, a lively intensity as described by political theorist Jane Bennett (Bennett 2012, 237-270). She asks us to take seriously the call from things as lively bodies, recognising both enchantment and the uncanny aspect to the task of addressing the agency of objects as ‘thing-power’. Similarly, the experience of activating the AR objects in the artwork can be both enchanting and uncanny in bringing to light that which should remain hidden and bringing to life that which had seemed dead.

Fig. 3. Brass Art: TouchAR (2021) collage artwork. Image credit Brass Art.



4. The ancient East Asian art of stone appreciation dates back to 7thC: *Gong Shi* (China) *Suiseki* (Japan), *Suseok* (Korea).

Developing a visual language for *TouchAR* the artists integrated imagery based on previously extinct native species, the Great Sundew and the Manchester Argus butterfly, both recently reintroduced through the renewal of local wetlands. As well as this flora and fauna they drew upon the forms of karstic scholar stones⁴. These scholar stones emphasise weathered landscape forms and qualities in miniature, as substitute for a whole terrain. Some of the sculptural forms re-presented as collage components were dramatically changed in scale, others had their surfaces wrapped with dichroic cellophane to refract iridescent light and create visual disturbances. The quality of the different elements – black polyethylene, archival artefacts, 3D scans, dichroic film, details from the *Tapestry of the Apocalypse*, glass fragments, NASA imagery, anatomical illustrations, and photocopies – create unsettling encounters from different visual and temporal registers. This strategic use of materials and technologies enables possible transformations in relation to embodiment, matter, and the scale of the artists’ gestures.

The Imbrication of Biological Life and Emotional Life

Brass Art understand the imbrication of biological life and emotional life as vital for wellbeing, and that dangerous consequences may arise for society when these entangled and contingent states are savagely torn apart (Leader 2016, 8-31). The *TouchAR* interactive artworks enable an encounter with the artists’ hands reaching

out into ‘real’ space, and harness habitual daily actions for engagement with an enchanting, unsettling, transformation of the user’s world. In response to the pandemic, it seemed urgent to produce artwork which engaged with the importance of green spaces for health, and the hope engendered by the re-introduction of native species into once-devastated post-industrial landscapes.

Fig. 4. Brass Art: TouchAR (2021). Interaction with AR artwork on postcards. Dimensions 9.8cm x 21cm. Image credit Brass Art.



5. Manicule – a symbol in the shape of a pointing hand, normally used to draw attention to a section of text.

The auditory aspects of Brass Art’s practice involve live recordings of the artists’ own voices, field and studio recording, as well as sounds coaxed from objects and the composition of electroacoustic, immersive soundscapes. In the *TouchAR* app, manicules⁵ direct users’ finger-tip touch to the places of interaction, which trigger animations and sounds. These reflect particularly human responses, personifying the insects or organs through involuntary sighs or whimpers. Other synthesised sounds turn the 3D objects in AR into resonant vessels that breathe, wheeze and crackle to enhance the animation and vitality of the encounter. The artists listened to extra-terrestrial sounds picked up by NASA, and recordings of a wave-powered sea organ, as they discussed the 3Dmodelling of Kircher’s engraving of *Solaris* (Kircher 1678), with attendant solar flares. The entangled yet distinct registers of forms and sounds are regarded by the artists as a form of worlding, and a response to “the fractured timespace of our present planetary moment” (Ginn et al. 2018, 214).

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