Understanding The Human Object: ‘If you prick us, do we not bleed?’

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Abstract— This paper outlines the work in progress and ideas behind a particular design project regarding relationships towards humanoid robots. Taking a research through design approach, the creation of a set of interactive animatronic heads will further knowledge and ideas exchange regarding the potential future of robotic relationship design. In which the robots become not only art pieces in themselves but also tools to further discussions and research. From an artist’s design and perspective, this work intends to further the creative approach to robotic design interaction.

I. AIMS

‘If you prick us, do we not bleed?’ [1]

This dialogue, taken from the Merchant of Venice, suggests mistreatment of a human being, lessening them to the status of objects void of human-ness. The bodily functions mentioned in this speech become a powerful tool, relatable amongst human beings. Perhaps closer studies of these functions may give further insight into how we might gauge the ‘humanness’ within objects around us and within us as human objects. This statement will form the basis of a number of sculptural models of animatronic faces, which in their production and function will question our relationship and treatment of these types of objects.

This work is part of a larger research project, ‘understanding the human object,’ in which various sub-projects will come together to question the idea of creating a working consensus between different disciplines and people. This particular strand (‘if you prick us, do we not bleed?’) intends to focus on the rhetoric within scientific modeling of humanoid objects and how the production of these visuals can alter emotional responses and behaviors.

Based on ideas within the historical representation of scientific imagery the sculptures created are intentionally provocative, in order to replicate the themes and ideals found within this type of image production. These objects will act as tools to form a greater understanding of sympathy and guilt towards non-human objects, as well as questioning our perception of what might be considered more ‘human.’

Giving an indication of how realism can alter our perception of humanoid objects.

The sculptures consist of three animatronic faces, each face responds to a negative stimulus designed to create an empathetic and regrettable response within the viewer interacting with the pieces. This feeling is created in order for the audience to gain a stronger affiliation with similar humanoid robots. One face will suffer a nosebleed when slapped; one face will shed tears when shouted at and the other will sweat when put under pressure.

By looking at aspirations in the portrayal of ‘the human being’ alongside the reality of bodily function. The models will bring together societal wants and desires alongside their counterpart horrors and disgusts. In order to test if they return a haptic and emotional response that conflates these opposing sentiments. In the aim to leave the audience with a greater understanding of the potential affects of the production and treatment of integrated societal technologies such as humanoid robots.

II. IDEA GENERATION

“The study of thinking machines teaches us more about the brain than we can learn by introspective methods” [2]

The human body is continually studied and depicted, beautified and disrupted. Greek Philosopher Protagorus suggested that “man was the measure of all things” [3] as the body itself was often used as an exemplary form of measurement. Within most sciences modeling the human being is an important way of learning human anatomy as well as ontology. Whether it’s within brain models in computational neuroscience, robotic figures or psychological mapping. Perhaps new visions of the body will be tainted by the past, and potentially alter future relationships with these images.

“As every artist knows, to represent a body is to comment upon it.” [4] yet it seems the production of this representation itself plays a large part in the understanding of the comment. The famous critic William Hazlett often referred to the question of truth in representation. "How should an artist depict the flesh and the soul, and what thoughts and feelings should such a depiction evoke?” [3] The power the artist has over the emotions of the viewer is quite frightening [5], yet any modeled human is also unknowingly visually criticized.

The production of humanoid robots has raised many

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1 “A Cubit (for example) is the distance from your elbow to the tip of your middle finger” says Prof. Marcus Du Sautoy in Horizon’s ‘How long is a piece of string?’ (How Long is a Piece of String? 2014)
questions regarding our relationship with objects that have particular visual human traits. The press questioned if “this is the most terrifying robot ever?” [6] artist Jordon Wolfson revealed his dancing robot to the public (fig reference 1), definitely more disturbing than the friendly looking iucb, “an open source cognitive humanoid robotic platform” [7] (fig reference. 2) used in scientific experimentation. The visual traits in aesthetics and movement alter the emotional relationship towards these robots. Perhaps the more expressive dancing robot is too close to recreating human-ness for comfort. “Our human body, as vessel for our ‘human essence’ is sacrosanct” [8]. Surely then to design acceptable humanoid objects they must appear as human-looking as possible to obtain this ‘essence.’ Yet if acceptance can only be achieved through ‘human essence’, then how could this possibly be quantified to obtain the correct amount of ‘essence’ for approval? An example of how difficult it is to quantify ‘human essence’ can be observed in professor Masahiro Mori’s ‘uncanny valley’ theory. (fig reference. 3) This hypothesis has stirred robotic design since it was theorized in 1970. Many robots are designed with human functions in mind, and are often therefore created to appear more anthropomorphic, this can often alter the way we interact with them. We would assume that the more lifelike the robot, the more affiliation we will have with them and therefore the better our relationship will be, and studies have shown this to be true, to a point.

The ‘uncanny valley’ theory suggests that the robots that look too human but yet still not human enough cause a response of revulsion among onlookers. Mori’s graph in figure reference 3 explains why. A humanoid robot can capture the essence of what it means to be human yet we are still aware it is not a person so we are able to connect with it, but the extremely lifelike androids give off a corpse-like demeanor. So perhaps replicating the human body in form is not exactly what ‘human essence’ is all about².

“Being a ‘bit’ human is simply not good enough, if you’re going to make an android, it had better be indistinguishable from the real thing or you might as well not bother.” [9]

Referring again to the graph, the designs of new parts must then fit into the two peaked sections to be acceptable. The last peak meaning that the parts would have been accepted as part of a healthy person, and the first peak would mean that the parts would be unrealistic but still accepted positively. In the viral clip ‘Happy Birthday David’ for the film Prometheus, David the android is an example of the ‘perfect’ robot “at Weyland Industries ³, it has long been our goal to create artificial intelligence almost indistinguishable from mankind itself.” [10] (fig reference. 5) Yet even if indistinguishable the idea of inner bodily functions have rarely been addressed, which may add a new dimension to Mori’s graph.

It seems now the body is viewed as a closed system. Julia Kristeva discuss’ the visions of the abject body, as opposed to our desired ‘clean and proper body.’ [11] The abject body is one that does not respect borders or rules; in fact it is one that disturbs order. Barbara Creed suggests that outcomes such as horror films create a separation between these two images of the body, which helps the viewer establish emotional distance [12]. So in the desire to create a higher affiliation with these objects the abject must mix with the clean and proper.

In the graph shown, the label ‘prosthetic hand’ is positioned very near the bottom of the valley, perhaps this additional function of the abject body may disrupt the uncanny valley theory. With this in mind, in order to test the hypothesis that added human function may create further familiarity towards the humanoid object. A piece must be made which is hyper real, as to replicate the idea of the indistinguishable, as well as incorporating an abject dimension to test if this generates a response which increases familiarity. The sculptural piece will take into account all of these issues, in order to create a hyper real body part that can still fit under the bracket of ‘prosthetic,’ the parts are made of a prosthetic silicone (fig. 6) used widely within film prop production. Although not attached to a body they are realistic and ‘indistinguishable’ in their execution yet understandably prosthetic. Similar to the work of sculptor Ron Mueck, hyper realistic in his fabrication although offering grounding with manipulation of scale, these sculptures will be grounded through presentation of their lone parts.

The encouragement of affiliation will come from the sculpture with the onset of the abject. Following Kristeva’s idea of the abject body, one which ‘leaks wastes and fluids’ [11] the additional bodily functions added to the sculpture will replicate a heightened human response to stimuli. These functions will come in the form of blood, sweat and tears, relatable outcomes that usually come from negative provocations, and which should trigger empathy towards the object and in turn affiliation.

III. INTENDED OUTCOMES

The practical element of this research will act as fuel to further discuss arguments as well as topics and concerns within ideas and knowledge exchange. Developing
awareness that can only be informed through the creation of the practice and design of the physical sculptural works. Similarly to the ideas of research through design covered in ‘Practice as Research: Approaches to Creative Arts Enquiry’ [13] as well as ‘Art Practice as Research: Inquiry in Visual Arts’ [14]. The works created will raise questions that were opened through theoretical study and generation as well as embodying knowledge that can then be accessible to onlookers. The real testing of knowledge created through the perception of these sculptures will be a cumulative process that will develop through the publishing of this work within the conference itself and subsequently with other exhibitions and exposure.

As the work is still in production, the testing of these sculptures within the stage of Research Through Design will alter and further progress the works. For example the focus has been so far in the animatronic systems, yet the choice of face used may also bear huge significance on the output of the result, (fig. 7) yet this can only be tested during exposure of the piece. Using an average face may be challenging as the ‘emblematic’ is hardly ever embodied in a single individual, showing that it is often an idealized approximation of the natural. Robots are usually made with production lines in mind, all systematically uniform. But how should a suitable representation be made of such a mutable, perishable, natural material, to create the farce of a realistic face, it seems “nature is full of diversity, but science cannot be”’ [15]. The age, gender or even the race may play a part in the subsequent emotional response achieved 4. Through discussion with those who have interacted with the sculptures these alterations can be developed beyond the conference and perhaps engage scientific researchers. Tests can then be completed which may further interdisciplinary ways of knowing. By researching past representations of humanoid robots and how they have altered behavioral changes 5, a set of speculative scenarios could be developed. These scenarios will predict what sorts of personal responses to these images may arise and their consequent affect on decisions in situations, as well as to manipulate these feelings and decisions. In a similar way within psychological studies scientists will ‘prime’ participants in which a candidate is exposed to a particular stimulus prior to completing a task. These modified practical outcomes will almost act as a primer, a stimulus that will affect subsequent feelings and actions, which can then aid in discovering the potential scientific concerns that may arise from these ideas. As this stimulus is produced, their exposure to viewers will inform the extent of their potential provocation.

Testing human-ness in robots is a common feature within science fiction, and offers accounts of fear in inhabiting a world with such objects. The production of machines that are exemplary of certain human virtues show the desire to create more than human objects that could potentially “relieve human workers whose attention wandered, whose pace slackened, whose hand trembled. ” [15]. Subservient and “all watched over by machines of loving grace” [16] this promise offered by humanoid robots free from the will, theory and judgment of the human being is both thrilling and terrifying. Allowing machinery precedence over our biology is a gamble between accuracy and error, which highlights our hopes and fears about the future of design and the body. Marvin the paranoid android in Douglas Adams’ ‘Hitchhikers guide to the Galaxy’ is an interesting example. With a “brain the size of a planet,” [17] he is forced into menial work but the implementation of a genuine people personality into his system means the other characters constantly feel sympathy and remorse in asking for his help, despite the fact he is an object. Or perhaps the focus on the unruly robotic beings in ‘Blade Runner,’ [18] in which Harrison Ford’s character Rick Deckard tests the human-ness with the use of a ‘Voight-Kampff’ machine (fig reference. 10) through the use of provocative emotional questions. These narratives could be used as a paradigm for the intended outcomes of ‘if you prick us, do we not bleed?’ Provoking the audience into creating an emotional response, but with the intention of them being able to gauge human-ness themselves. This historical context will create a base in which the justification and implementation of research into producing humanoid robotics can be questioned

This production of sculptural and testable objects can be compared to the bridge between the educational and commercial purposes behind such collections as wunderkammers of medical oddities. Creating intellectual
inspiration from musings of the eye. Images and objects that were once used as educational items become phenomena that bring in the public, but also commercialized objects and images can invite a student audience for educational reasons. Patrick Mauriès says the success of the cabinet of curiosities stems from the fact it adds to the depth of the object’s meaning, by situating it within an abnormal setting. Saying “a scenario that is as historical as it is phantasmagorical, and that invites every form of deviation, contamination and inaccuracy, in a systematic disruption of the historical data surrounding cabinets of curiosities.” [19] Suggesting that unusual circumstances are beneficial to a professional as well as public audience, perhaps then disruption and imposed provocation will benefit and enrich the questions regarding the potential knowledge distribution educationally and professionally of the face sculptures.

IV. CRITICAL REFLECTIONS

This project follows Latour’s Actor Network Theory, in which physical images play a part within a larger social network, affecting those who come into contact with them and subsequently creating new ways of knowing. Vivian Sobchack argues that within cinema “things transcend their status as objects at the very moment they promise to be only that, mere objects.” [20] As if the life of the object intends to increase interpretation of a wider scene, which in turn modifies views. These sculptures intend to do exactly that, acting as tools that may create a consensus of perception in the people who interact with them.

How might the making of an image affect ‘understanding’ or ‘awareness’ and how might these travel to form larger societal beliefs? The construction of an average within realistic imagery for example is greatly influenced by the production of facts, especially as scientific imagery in particular structurally relies on truth to reality. Bruno Latour focuses on the composition of facts and logic in “Laboratory Life.” [21] The creation of logic forms the basis of how we visually represent how things exist, and the forming of this logic seems to come from “the all-too-human scientists” [15] who Latour suggests with straightforward character create practices of interpretation, which they try to sustain within a laboratory setting. Although this interpretation surely seeps beyond the lab, where the dutiful attempt to create imagery void of emotion has made the images perhaps alternatively emotive to those outside. Latour suggests “there were always some corners in which notions of "soul" or the "pure vital force" could find refuge,” [21] beneath scientist’s mechanistic view. Perhaps in the production of these interactive sculptures these notions will come to light.

It is often difficult to distance the self from the image, as humans empathize with all images of other bodies [22]. Yet the level of empathy is variable, Jonathan Crary questions if the nature of the stimulus is not as important on the observer as their physiological makeup and functioning of sensory apparatus [23]. Perhaps then the mechanical workings of the body may play a part in the perception of itself. With the aim to create a physiological feeling of guilt or emotional response of affiliation, these bodily responses will alter the levels of empathy felt towards the objects.

A look towards other cross-disciplinary projects and artworks may suggest how audiences have responded to these types of projects in the past. As they aren’t being used to research medical conditions or the curing of diseases, cross-disciplinary artworks such as Eduardo Kac’s rabbit Alba [24] or Oron Catts’ Victimless Leather [25], are often seen as “useless” or “decadent” [4], even though they open up other avenues for scientific research as well as new ways of knowing 7. Through attending Research Through Design this exposure of the project will reveal if the circulation of knowledge through this type of imagery is understandable across disciplines, and who finds what acceptable in terms of the use of that knowledge.

Figure 11 shows testing of animatronic bleeding face

REFERENCES


7 Some of these artworks are discussed within texts such as (Ginsberg, Calvert, Schyfter, Elfick, Endy, 2014) (Ascott, 2006)(Myers, Antonelli, 2014) (Schwartzman, 2011) (Wilson, 2012) proving to open many new links, conversations and possibilities for future works and research.

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* Latour deeply analyses how “minutiae are seen to give rise to ‘logical’ arguments, the implementation of ‘proofs,’ and the operation of so-called ‘thought processes.’” (Latour, Woolgar, 1986, p.151) as he studied scientists working within a lab.


[10] Happy Birthday David (2012) Directed By Johnny Hardstaff, USA, Twentieth Century Fox [Viral Film]


