

## TaPRA Interim Event: Performing Robots

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Louise LePage

### Performing Robots: Some Reflections

#### Why Performing Robots?

The forms that robots will take in society is up for grabs and I think that performance and theatre scholars can bring invaluable knowledges, skills, and practices to bear upon research into robots, which are inherently performative entities: robots literally find their forms through their appearances and the performances of their forms.

I want to move towards exploring, understanding, and possibly contributing to the forms that sociable robots will take in the world. Robots that find form in sociable roles and scenarios - as companions or carers to the sick and elderly - need to be carefully cast, written, and directed. Given that the movement towards robots taking part in the human world seems already well under way, I want to give thought to the characters that robots will be cast to play in their performances.

#### Some questions driving my interest in performing robots

- How important might be the audience's imaginative and emotional engagement with the sociable robot performing in real-world human-robot interactions?
- What parts of the robot's form and performance (i.e. its look, identity, types and qualities of gestures, voice, and so on) might be most significant in generating emotional and imaginative engagement?
- How far must the robot performer be the robot character it presents?
- How humanlike should robots be in order to become effective in social terms?
- Does the robot have to have general AI, for example, in order to be treated by a human in real-world situations as if it has general AI? Or can it just have the appearance of AI?
- What can we learn from theatre's so-called *suspension of disbelief*. When we are in a theatre, we do not really believe in the fictional enactment on stage but we are, nonetheless, frequently moved by it. What are the component parts of the 'belief' experienced by theatre audiences and how might we apply these ideas to sociable robots and the humans interacting with them?
- What roles do character and characterisation play in effective human-robot interactions?
- What is the status of the uncanny in all this and, conversely, of affinity and empathy?

## Robots are Performers

My starting premise is that robots are performers, or, at least, I propose they should be approached in such terms. In order to be effective in human-robot social interactions, I suggest that robots will need to behave as performers.

So what do I mean by a performing robot? *Performativity* has helped me to think through ways in which robots might be performers in fundamental terms. Robots are densely signifying objects; when we think of a robot or encounter one, several narrative tropes come to mind: the terminating robot [slide]; the cute and lovable non-humanoid robot [slide]; the humanoid that is indistinguishable from the human (like the Replicants in *Blade Runner* and Ava in *Ex Machina*). However, robots are not subjects as human performers are subjects, so there is no authentic and fundamental character identity to overlay: the robot is given an identity and implied character role to perform. In short, it is characterised by means of specific qualities and features of its appearance, the qualities and features of its movements and voice, and by virtue of the contexts and locations it is positioned in, including how it is treated by others.

I am also finding it helpful to think through the status of robots as performers by considering 'liveness' in both its senses: the performer as alive and performing in the present.

Some important qualities for (a)liveness in relation to the robot performer include:

- **Animation**

The robot needs to move in order to appear lifelike.

- **Autonomy**

For the robot to be accounted a performer it needs to have some degree of agency or, to put it differently, the robot's actions should not be controlled. This is a more nuanced proposition than it initially appears. Consider: how far does pre-programming count as a form of puppetry? My sense is that if a robot that has been programmed to prioritise, for example, the colour red over all other colours, goes on to fulfill its programming, it is autonomous. However, if a robot has been pre-programmed to turn to look at someone wearing red in a particular manner at a given moment in time, it is not autonomous; it is a puppet.

- **Responsiveness to environments, including, or especially, people**

Hiroshi Ishiguro's robot, Geminoid F, is carefully directed by Oriza Hirata in his android theatre to respond to action on stage by turning her head, smiling, and so on. However, her responses are sometimes slow and her movement is not always fluent, which can be disconcerting, given her highly humanlike appearance.

Meanwhile, RoboThespian's capacity for responsiveness is greater than Geminoid F's. This capacity is connected to its enhanced movement possibilities, as evidenced in Pipeline Theatre's production of *Spillikin: A Love Story*, but even here, you can see that the robot is not really responding to its context.

The Nao robots and Myon (in Gob Squad's *My Square Lady*) are best at demonstrating

responsiveness to their circumstances. Their programming means they attend to peoples' faces, certain colours, noises, and so on, in a way that signals a form of intelligent responsiveness.

- **A face or head**

We take it for granted that human performers have faces and heads but these features become less self-evident when the form of the performer is robotic. It strikes me as likely that for a robot to perform effectively – to manifest as a meaningful, and meaning-making performer – in social situations with humans, some body part or parts are required to signal attention and responsiveness to others, i.e. looking and/or hearing. A face and/or head seem the most important of all parts for conferring the appearance of conscious awareness and a capacity for communication.

Consider Guy Hoffman's lamp for an elegant example of how the head of a lamp can, through following the human's movement through space, and through its use of colour, can seem to express conscious attention and emotional capacities: see

<https://www.youtube.com/watch?v=4oCVZTrWrKw>.

Contrast this with robots that have no face or head, such as Paul the drawing robot: [https://www.youtube.com/watch?v=bbdQbyff\\_Sk](https://www.youtube.com/watch?v=bbdQbyff_Sk). It is difficult to read this robot as an individual performer, clever and fascinating as this technology and 'artistry' might be.

- An apparent objective or desire to communicate (if not to be watched).

On occasion, Myon, the autonomous learning robot in Gob Squad's *My Square Lady*, looked at the audience and, in doing so, caused a gasp of wonder and endearment, as the audience seemed to read Myon's glance as, 'Do you see what I have to put up with?' or 'I don't know how to act'. Differently, but equally potently, one of the Nao robots in Blanca Li's dance piece, *Robot*, when it turned to look out into the audience, apparently straight at us, prompted my son to say to me: 'That robot keeps looking at me! Does he want me to go up on stage with him?' At these moments, we humans anthropomorphise the robot's actions and read them in coherent sociable terms even though we know, or think we know, the robot lacks any kind of autonomous intelligence or will.

As I move forwards with my research, I mean to refine and nuance this list of elemental features of the performer in light of my experiences of analyzing and working with performing robots.

### The kinds of sociable robots with which we will want to interact

I don't think we will want highly realistic androids for a while. [Here is a clip of the humanoid Nadine: <https://www.youtube.com/watch?v=cvbJGZf-raY>.] This is not just because they have a capacity to appear creepy and threatening. It's because their performances of their implied characters are inevitably disappointing. Their robot capacities at present do not correspond with their appearances. Robots such as Nadine set up sophisticated sorts of expectations by virtue of their highly humanlike appearances, which are let down by insufficiently humanlike capacities.

What we want to work towards, I suggest, are robots with which we humans will want to relate and that do not prompt us to feel threatened. I don't know what forms sociable robots will ultimately take but some robots that are being developed today are clearly inspired by figures such as dolls and toys (consider Nao, Robear), cartoons and animation (consider how Eve in *WALL-E*, along with the robots that inspired her form, resonate with the likes of Myon and Honda's Asimo), animals/ pets (PARO the therapeutic robot seal, the Hasbro cat), and so on. Our relationships with, and our feelings for, such robot forms have less to do with their humanlikeness, perhaps, than with their character forms (assuming the objective is to create sociable robots with which we want to interact). These nonhuman forms need, I think, to inspire us to engage imaginatively with them: they have to make us want to 'play', to engage with them, and they have to be capable of performing the character roles implied by their character forms and identities.