

Dead or alive, the Yutu rover says much about how we relate to robots

February 5 2014, by Alice Gorman



Can we go too far humanising machines? Credit: Flickr/Jeremy Brooks

This weekend, the moon's fortnightly rotation cycle turns China's lunar rover [Yutu](#) (the Jade Rabbit) and its solar panels toward the sun once again ... but whether the rover wakes up or not remains to be seen, as Yutu already announced its impending death to Earth-based watchers with a series of first-person messages on January 25.

The messages were posted on China's equivalent of Twitter, [Sina Weibo](#), from an unofficial account believed to be run by a [group of enthusiasts](#).

The rover has been on the lunar surface since December 15, when it was

deployed from the [Chang'e 3 lander](#).

Since then, it has covered 100 metres with its six-wheel locomotion.

As space scientists struggled to get Yutu to respond to commands to fold in its [solar panels](#) and external equipment, the two-week lunar night descended, plunging the exposed equipment into -150C temperatures without protection.

In 1971, Russia's [Lunokhod 1](#) similarly failed to make it through to the next dawn, even though it had successfully entered mechanical hibernation.

It's not impossible that Yutu will survive the night. But it certainly doesn't look good.

What is different about its probable death, though, is the way that it has been conveyed to the public via the Chinese state news agency Xinhua:

I'll tell everyone a little secret. I'm actually not that sad. I'm just in my own adventure story, and like any protagonist, I encountered a bit of a problem. Goodnight Earth. Goodnight humans.

More than 6,000 people have responded to the posts with messages of hope and appreciation. (Some, though, thought it "[creepy](#)".)

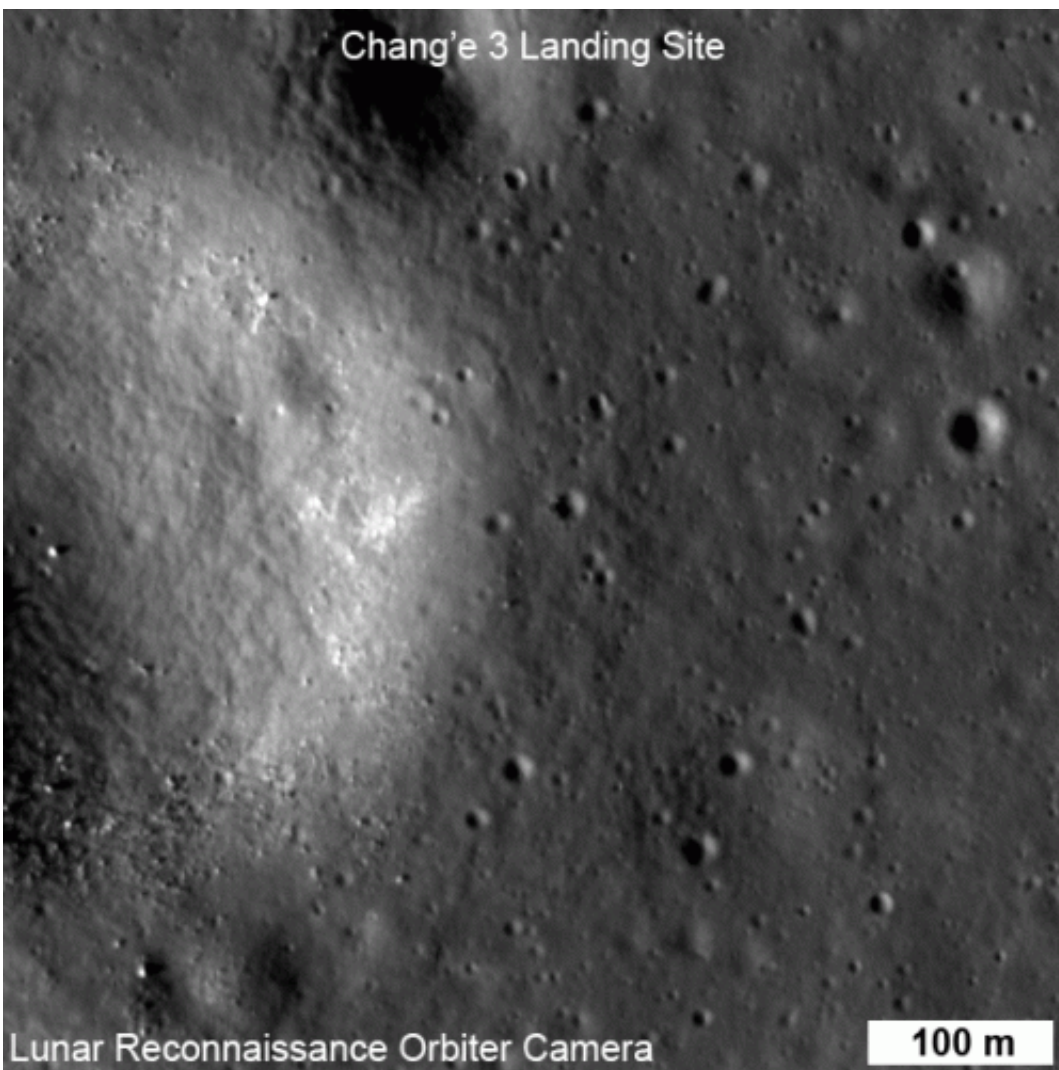
For them, it doesn't matter that Yutu is not actually sentient, nor directly responsible for the messages.

Space fandom

Yutu is not the only spacecraft to have a public fan base. Social media such as Twitter and its equivalents play a prominent role in this. Other

high profile spacecraft which communicate in first person include [@MarsCuriosity](#) and [@NSFVoyager2](#).

But is this a trivialisation of serious scientific endeavours? It could be argued that these engagements are cynical attempts to gain public support for funding [space exploration](#); perhaps a means of glossing over the vast amounts of money spent on space while (in the view of critics, more urgent) terrestrial problems remain underfunded.



However, many of these accounts are not official, but run by fans. This is the case for Yutu's microblog, as well as @NSFVoyager2 and the popular [@SarcasticRover](#). Unconstrained by communications policies, these accounts sometimes use humour to great effect.

The question, then, is whether this approach makes for effective science communication. Does following an anthropomorphised spacecraft lead people to engage with the science behind it?

Vanessa Hill, CSIRO's Social Media Manager, argued in an article last year that:

By personifying the spacecraft in the form of social media accounts we're characterising spacecraft in an easily accessible way which allows people to connect with specific missions.

Human-robotic interactions

The issue, however, is much broader than it at first appears. We can take this a step further into the field of social robotics.

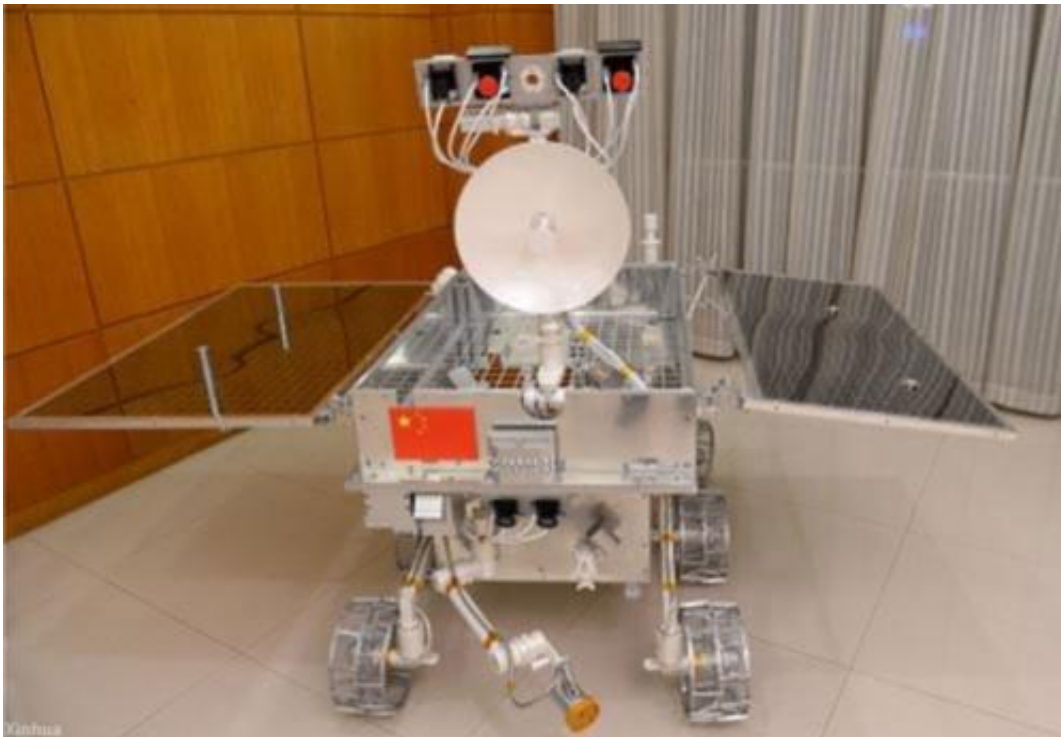
While the development of the fully humanoid robot has been a longstanding scientific ambition, any human-like feature can be co-opted into building a relationship with machines. We can see this in the natural tendency to see faces in inanimate things.

On rovers like Yutu, cameras and antennas often look a little like necks with a head emerging from the body. It's enough for us to attribute emotional states to them.

In this engagement, whether or not the robot is capable of feeling these emotional states is irrelevant. It's more whether the robot *appears* to have them. This is what is commonly known as the [Turing Test](#).

Of course, humans reading emotions into a space robot and conveying them as if they originated from the robot is very different. But perhaps the time when such robots will be designed to translate their mechanical states into statements that they tweet directly is not too far off.

In all of this, though, we are still thinking of "us" and "them". Even if it's not actually the case, we like to treat the robot as a separate being with sentience. It makes the communication exciting.



A scale model of the Yutu rover shows its more anthropomorphic attributes.
Credit: Joel Raupe

We can even take this a step further. These first-person communications as if from spacecraft bridge the distance between remote and proximate interaction.

In remote interaction, humans and robots are separated in space, and even sometimes in time, such as the [time lag](#) in communication between Mars and Earth.

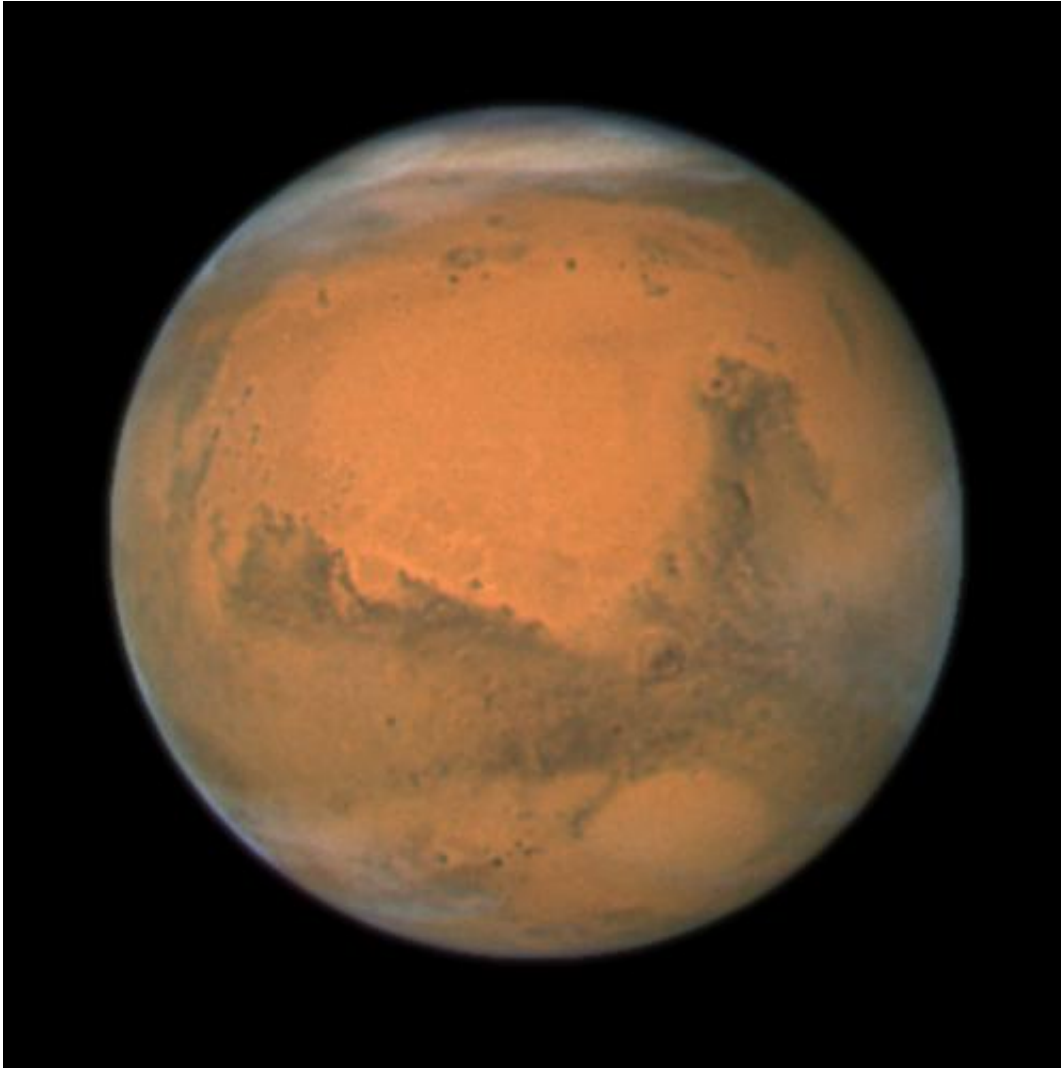
In proximate interaction, humans and robots are co-located, for example, in the same room or facility. The physical distance affects how people behave around machines, as well as the robot's level of autonomy.

What these social media interactions do is make people feel more present in the remote location, collapsing the distinction between near and far. It doesn't end there, though.

A post-human perspective

If we take a "post-human" perspective, we can look at space robots as extensions of ourselves. We don't have to anthropomorphise spacecraft: they can actually *be* our senses. This is how metatechnology researcher [Robert Pepperell](#) explained it in a 2004 conference paper:

This state of co-extension requires that we revise our attitude towards human-machine interaction: if technology is now regarded as an extension of human cognition, then the classical model of interaction whereby two distinct entities are interfaced, one sentient and one insentient, is inaccurate. In its place we must posit an exchange of cognitive activity between the sentient user and the cognition embodied in the device.



Mars: it's far out (literally). Credit: NASA, ESA, the Hubble Heritage Team (STScI/AURA), J. Bell (Cornell University), and M. Wolff (Space Science Institute, Boulder)

Yutu's live microblogging of its own death from the first-person perspective could be seen, on the one hand, as a measure of the extent to which [social media](#) have become pervasive in engaging the public with civil space exploration.

But I think it's something more. Space robots are not yet fully

autonomous, as they rely on human commands. As Yutu shows, however, the exchange is not all one way. Even if the machine itself is not generating the posts, there is still an interaction whereby the actions and "experiences" of the rover are translated into a verbal message which elicits human emotional responses.

The public may not be influencing Yutu's behaviour, but it sure as heck is affecting ours. These kinds of interactions are charting future territory in social robotics. Yutu's legacy is part of this new cognitive exchange.

This story is published courtesy of [The Conversation](#) (under Creative Commons-Attribution/No derivatives).

Source: The Conversation

Citation: Dead or alive, the Yutu rover says much about how we relate to robots (2014, February 5) retrieved 27 April 2024 from <https://phys.org/news/2014-02-dead-alive-yutu-rover-robots.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.