

# Not simply a vision thing

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*"Bt cotton, Bt brinjal and many technologies of the future exist through the expectations they generate and mobilise about the future." File photos of students in Chandigarh protesting against Bt brinjal. Photo: Reuters*

**The act of developing a technology is as much work inside the laboratory as it is of engaging with the state and society on various concerns and questions**

Monsanto recently decided that it [would stop the release of new genetically modified](#) (GM) cotton technology because of "uncertainty in the business and regulatory environment". At the same time, it was reported that GM mustard has moved closer to obtaining clearance for commercial cultivation in India following a key committee's favourable assessment on issues of soil suitability and risks to health and ecology.

The issues involved are complex and contested, and the challenges and contradictions may be evident to even the most casual of observers. Bt brinjal itself may have faded away from public discourse but the debacle over its introduction is not something that will be forgotten in a hurry. The contestations over Bt cotton continue to be alive in scientific research, in experiences on the field, and in policy debates. The seed industry has, in fact, split down the middle over a reorientation of the regulatory and policy frameworks related to Bt cotton. And yet, for a certain prominent section of the science and technology (S&T) establishment of the country, the promise of GM mustard trumps all scepticism.

Contestations

The conundrum here is not so much about the technology itself as it is about the promise that imbues the technology and which holds the present and the future together. Building promises is very similar to building facts, notes Cynthia Selin who studies the intersection of science, technology and society. It is the promise and vision of the future that then becomes key in generating a constellation that provides social and political legitimacy on the one hand, and much-needed financial resources on the other. Bt cotton, Bt brinjal and many technologies of the future exist through the expectations they generate and mobilise about the future. The act of developing a technology, therefore, is as much work inside the laboratory as it should be of engaging with the state and society and with their various concerns and questions. This will not be possible if the public is seen as ignorant or ill-informed, and the activist reactionary or an agent of vested interests. The contestation is, in fact, over the vision of S&T, of society and, for that matter, of the future itself.

In the case of GM mustard, work was done at Delhi University using public money provided by the government. And yet it needed the Central Information Commissioner to say that biosafety data around GM organisms should be available in the public domain. There are some key questions here. What explains, for instance, this deficit of trust in the public and in democratic mechanisms set up by the very institutions that provide the resources and the legitimacy for these new technologies? Is it an anxiety about failure of the technologist or of the technology itself? Or is it about the stakes involved in the socio-technical-economic system that has been mobilised to create the legitimacy in the first place? Does it say something about the potential failure of an imaginary technology that is based exclusively on the promise of the future? Can the narrative be one of hope and promise alone with no space for doubt or the possibility of any failure at all?

Technology Vision 2035

This indeed is the premise one sees embedded in India's Technology Vision 2035 (TV 2035), a vision produced by the Technology Information, Forecasting and Assessment Council (TIFAC), an autonomous organisation under the Department of Science and Technology. Released earlier this year by Prime Minister

Narendra Modi, TV 2035 charts out trajectories for society through various technologies that will help make India a 'developed' country by 2035. The vision is both an account of a future and a route to that future where technology delivers, provides and secures. Risk and vulnerabilities that are inherent to technology and therefore to our increasingly 'technological cultures', as Professor Wiebe Bijker, sociologist of science and technology, calls them, are part of the narrative in only a very marginal manner. There is little, if any, doubt about the capacity of technology and the different technologies to deliver the goods. TV 2035 sees people opposed to certain technologies like nuclear and big dams as a barrier to their dreams. These then need to be addressed through better governance and not better technological design because "bottlenecks lie in policy and not technology".

The past and the present, we know, are full of various dilemmas, challenges, even failures of technological promises and yet, a substantive engagement with the ethical, legal and social (ESLA) issues of research, development and deployment of technology is conspicuous by its virtual absence.

When failure and risk are integral parts of the technological enterprise, why is it that technological visions like TV 2035 have such little space for including and discussing them? It may not be a conscious choice, but it is not an innocent one either. The particular question here is not whether GM mustard is acceptable, which is a rather different debate. The point is to note that the promise and the promissory visible frontstage in advocating a GM mustard is complemented by a vision backstage that is unwilling or perhaps unable to look at anything but that promise. The ideal of the democratic in scientific and technological choices, while desirable, is certainly not an easy one to realise because the messy issues of the ethical, legal and social have to be dealt with both frontstage and backstage.

#### Political and democratic promise

An illustration of this is visible in a situation where the technological only appears marginal at first glance. On a visit to Kashmir, a conciliatory Home Minister Rajnath Singh offered to engage with anyone who was interested in finding a solution to the crisis there. "I will be staying at the Nehru Guest House. Those who believe in Kashmiriyat, Insaniyat and Jamhooriyat are welcome," he tweeted in an effort to reach out to all. It was as much an invocation of the political and the democratic promise as it was of the technological promise of modern communications. The irony only came forth when he was asked how this message of the Home Minister would reach the people when the government itself had blocked Internet services.

What more can one say of the inextricable intertwining of the political and the technological with the social, legal and ethical? The technological has promise, no doubt, but it is not untethered to chart territories of its own making.

First published by The Hindu

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