

Food, Transparency and Social Hierarchy in China: GMOs vs. Organics

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The challenges of securing cheap, plentiful, and safe food for 1.4 billion has led to significant public outcry and concern across the spectrum of Chinese society. On one hand, food shortages persist in impoverished rural areas, and on the other, hundreds of millions of China's emerging middle class worry about the safety of basic provisions like rice, oil, and milk. Such concerns have sparked national debate on the appropriateness of two different global food innovations: GMOs, or genetically modified organisms, and organic foods.

GMOs and organic foods may seem like separate issues, but they represent opposite drives for the future of Chinese food production: one is about harnessing futuristic techniques to produce food for the masses; the other advocates small-scale, pre-modern methods, to create more safe and healthful food options.

To understand public concern and attitude about these recent food phenomena, we examined Weibo discourse on GMOs and organic foods on the Crimson Hexagon Foresight analytical platform. We also contrast these cases with the US experience, where both GMOs and organic foods are ubiquitous. Our analysis and results show that while these are very different innovations with different food safety implications, netizen reactions to both display some common political and social dynamics. The lack of government regulation and transparency creates a culture of distrust around both types of products: even though GMOs are meant for mass production while organics target the wealthy, good and bad are equally hard to tell apart on both ends of the spectrum, and consumer trust, once lost, is hard to regain. A badly misinformed public is not only disempowered to support good companies and efforts, but also prone to being taken advantage of by bad ones.

GMOs: Lack of Transparency and Conflicts of Interest

From many perspectives, a possible solution to China's food security and safety issues would be GMOs, especially genetically modified foods, which have significant advantages, such as high production, low price, resistance to pests, herbicides, and by some measures increased nutritional value. GMOs have been commercially sold in the US since 1994, and currently account for 85% of corn and 91% of soybeans produced in the US. Partly because of the strength of the agribusiness lobby in the United States, the American public has long accepted GMOs on supermarket shelves. But outside the US, where corporate interests are not as strong, particularly in Europe and Japan, consumers haven't been so complacent. As urbanization has led to widespread loss of farmland in China, and under the specter of food shortage, the government has increasingly supported the production and import of GM foods.

Our analysis of Weibo posts shows that a series of crises and communication missteps have created a culture of fear that overstates hazards of GMOs and overlooks potential benefits. Since November 2011, 54% of Chinese netizens express negative sentiment about GMOs, mainly citing reasons such as the lack of regulation and transparency and power of corporate interests. The first major GMO scandal happened in 2011, when it was revealed that the cooking oil brand Jinglongyu used genetically modified soybeans. What started as a company scandal became a full-blown public crisis as netizens learned that more than 80% of the soybean market in China is genetically modified.

At the time, few people cared about the science of GM foods. This event was especially sensitive because the soybeans were imported, so the government was criticized for being unable to ensure food safety and betraying its own citizens to nefarious US corporate interests. The public outcry was so strong that the Health Ministry claimed that they had never approved GM soybeans, even though they were actually approved by the Agriculture Ministry. This type of bureaucratic passing of the buck made people resistant to hearing balanced opinions about GMOs.

A recent series of campaigns to rehabilitate GM foods illustrates murky connections and presents a useful study of how hard it can be to change public opinion once trust has been lost. Weibo users were invited to take place in GM rice tastings all over the country and report their experiences online. According to ChinaDialogue.net, a Weibo user named Tilling Farmer spearheaded the campaign:

“Popular science microblogger Fang Zhouzi reposted the message, and soon 200 people had requested a sample. The GM rice had been developed by Huazhong Agricultural University to be resistant to butterflies and moths. ‘Tilling Farmer’ was an alias of Professor Yan Jianbing, who researches molecular breeding at the university, and is a colleague of Lin Yongjun, head of the GM rice project. After the positive response to the offer of free GM rice, Yan announced that he was planning a larger scale event in cooperation with Fang Xuanchang, editor of the pro-GM website Agrogene.cn, a site recently set-up to persuade the public that GM technology was safe.”

Fang Zhouzi is a popular scientific writer known for his crusades against pseudoscience, and Fang Xuanchang was the former science and technology editor at Caijing Magazine. Yet even with these bona fides, most netizens thought the testers were bribed and that Agrogene, which has not disclosed any corporate connections, is serving American GM interests. For example:

试吃本来就是一种作秀，企图蒙骗消费者！如果吃了，立即死亡，谁还买转基因食品？转基因就是让孟山都把钱赚足了，让人再慢慢死亡。转发微博@艾琳 V5：发表了一篇转载博文 《[转载]央广新闻揭露最需胆量的转基因试吃者系被收买》

Test eating has always been a show in an attempt to deceive consumers! If you eat, you will die immediately, who would buy GM foods? GMOs are just used by Monsanto to make money and make people die gradually. Forward microblogging @ Irene V5: published a blog article: "[reprinted] CNR News revealed the boldest transgenic tasters were bribed"

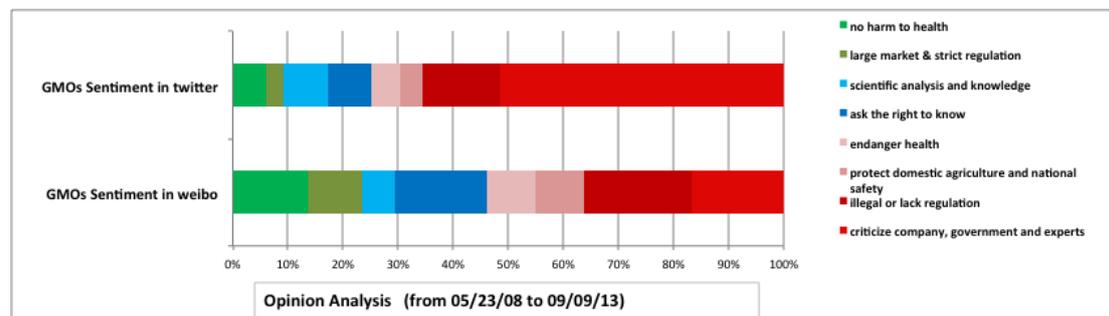
Later, Wang Zhian, a CCTV commentator, launched a similar tasting campaign and claimed to

be the first, spawning a feud with the Fangs. The Fangs, in turn, were applying for a GMO Science Popularization Special Fund from China's Ministry of Agriculture, which netizens saw as proof that the Fangs were angry with Wang due to business competition.

The petty squabbling within the pro-GMO circle made people distrust GM foods even more as they seemed to indicate these so-called scientific writers had commercial interests – after all, if everyone just wants to promote GMOs for the country's benefit, why should it matter who started campaigning first? Once again, murky motives reinforced people's belief that GMOs are just tools for companies to make money at the expense of public health.

Interestingly, when we analyzed GMO sentiments on Twitter (analyzing the use of the term in Chinese), excluding users in China, we found that people who have spent time abroad are even more critical of GMOs, perhaps due to the freer nature of the platform, the more critical tendencies of overseas Chinese, or the recent trend toward consuming more natural products.

Graph 1: Sentiment about GMOs comparison between twitter & weibo



One widely forwarded post even espoused a conspiracy theory that American GM foods were designed to eliminate third world populations:

揭露转基因内幕真相，触目惊心，中国人必看此视频！转基因食品配合美国消灭第三世界人口计划 <http://t.co/QiQzuBO0tS>

GM insider exposes the shocking truth; Chinese people must see this video! Genetically modified foods cooperate with the United States on a plan to eliminate the Third World population <http://t.co/QiQzuBO0tS>

Other rumors prevalent on both platforms claim Americans never eat GMOs, and “even Africans” don’t import GMOs. In America, where there is no shortage of GMOs nor rigorous debate on both sides, consumers remain skeptical.

Organics: Lack of Certification and High Prices

At the other end of the spectrum, more and more consumers with economic means are forming their own “special supplies” of organic food in response to mainstream commercial foods becoming increasingly adulterated. Yet unlike in other countries such as the United States, in China, the government provides no official certification for organic, leading to the rise of private certification institutes. These institutes don’t share a uniform standard and charge high costs,

resulting in consumers' mistrust and farmers' unwillingness to produce organic food. Though organic in the US connotes environmentally friendly and are increasingly mainstream, in China, organic is the pinnacle of safety and commands exorbitant prices, not uncommonly four or five times more than conventional foods. Because of food safety issues, in many ways, the stakes are higher in China, and because of the high price differentials, organic has become a luxury good only available to a subset of society.

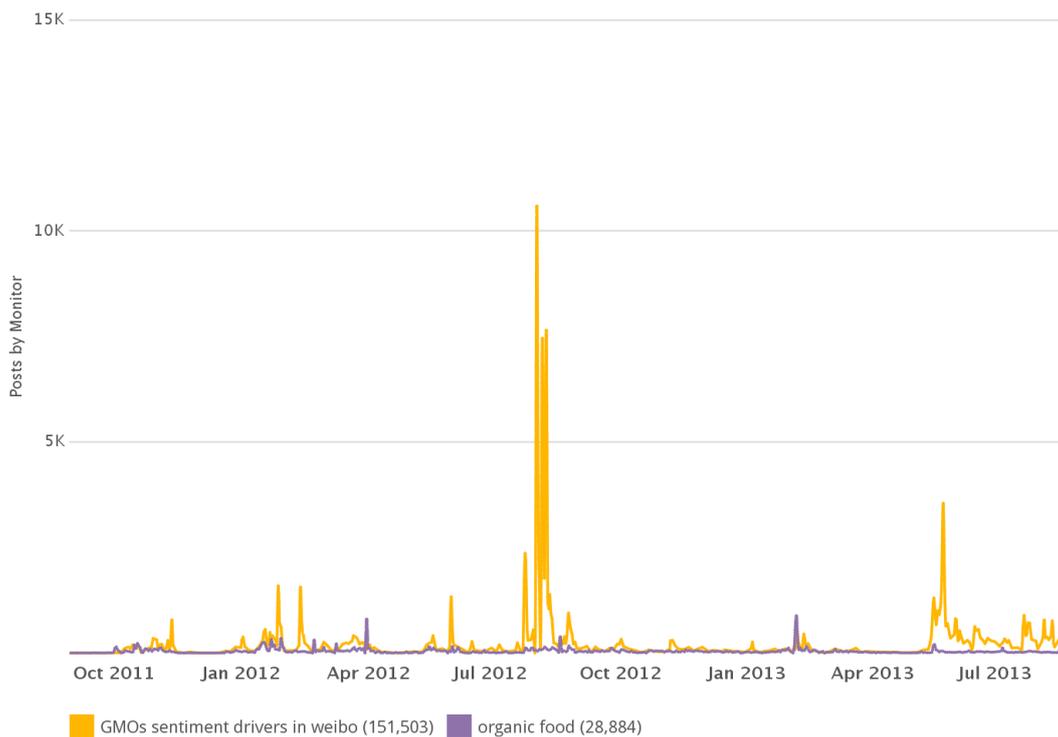
Our Weibo analysis revealed that since November 2011, 66% of netizens view organics negatively. While about a fourth of these posts cited problems with certification, the overwhelming reason for most negative sentiment was the high price. People view safe food as a basic right, and for organic food, the lack of unified and official certification further damages an already shaky proposition. With no governmental certification, good and bad products are hard to tell apart, and the high prices become unjustifiable. A significant event on Weibo during our analysis window was when Maotai, the famous liquor brand, was taken to task in 2013 for forging its organic certificate. That's when people learned that there's no official certification for organic food in China. Subsequently, sentiments around organic food became even more negative.

Food and Social Hierarchy

Recent crises and backlash against two of these food types display the costs of not being transparent. For GMOs, the treatment of genetic modification as a dirty secret only reinforced that very sentiment in people's minds. For organic foods, businesses' ability to buy or forge a certificate undermines the very label. Maotai was an especially vivid example because the brand is so expensive and iconic, which led to consumers feeling particularly betrayed.

A key theme, however, is that while organics are something that people can choose to opt into and disproportionately affect privileged classes, GMO regulation affects everyone. Thusm when looking at the volume of posts, as the figure below shows, GMOs draw much more debate than organics, presumably because they affect more people.

Graph 2: Weibo volume comparison between GMOs and organics



Volume Trend Comparison from 9/28/11 to 9/13/13 🌸

All over the world, organic foods cost more than non-organic foods, but in China, consumers perceive organic as simultaneously the only safe food and a very exclusive food. On the other hand, GMOs that are said to cause cancer and infertility are consumed by the masses. In America, food debates tend to focus around environmental issues and ethics of consumption. In China, personal health trumps all. The prevailing belief is that for ordinary people, there is no food that is both safe and affordable. No wonder then, that in September of 2012, news about an experiment held by American university using Chinese children in a trial of GM golden rice aroused furious dispute in China (the largest “spike” in the graph above). People were afraid that their children would be “killed” by these “unsafe” GM foods. Also, the human trial reminded Chinese people of the Japanese army’s cruel human experiments during World War II. The condemning voice was so strong that two officials from the Chinese Center for Disease Control and Prevention and the head of science and technology at the Zhejiang Academy of Medical Sciences were sacked. It did not escape public notice that government officials who push for widespread acceptance of GM foods may very well eat organic at home.

The gap between rich and poor, citizens and officials, threatens social stability wherever it crops up. Below is a highly reblogged post describing the life of a CCP member that caused the biggest spike around “organic food” in 2012,

@作业本: 当有人给我豪车大宅, 对我点头哈腰, 让我享有各种特权, 有无数的人把我奉承, 把我的后代送到国外, 吃一顿一万的有机食品, 喝的是内部特供, 看专家直接上门, 想办的事情都以最快的事情办成, 去国内任何地方都免费, 出国有人买单.....我也会一生永远跟党走, 活一天拥护党一天。。。

@ Zuoyeben: If someone gives me mansion and luxury cars, bowing to me, so I enjoyed all the privileges,

there are countless people who flatter me, sent my children abroad, paying ten thousand for a meal of organic food, drinking the internal special ones, go to the doctor's home directly and make anything successful if I want, free to go anywhere in the country, some people pay for my overseas travelling I will go with party forever, support the party for every day I live. . .

China's food market currently operates in a vicious cycle of misinformation and mistrust. Lack of government supervision and transparency causes misunderstandings with consumers and misbehavior by companies. Complicated media relationships only confuse people further, and even so-called experts are unreliable. The only people who can thrive in such a system are those with resources – not just financial resources that enable purchasing high-quality food, but information resources that can cut through hidden agendas and access exclusive producers. In a country with such an old and proud culinary tradition, where food is central to every interaction, the lack of widely available safe food is deeply distressing to Chinese people and fuels their resentment toward income inequality. Thus, the dichotomy of GMOs versus organic foods is not only about food quality but also about social hierarchy. China's food safety problem is also a food security problem, and it concerns the whole of society.