



## Resisting and accepting: Farmers' hybrid epistemologies in the GMO controversy in Chile



Manuel Tironi<sup>a,\*</sup>, Maite Salazar<sup>b</sup>, Daniel Valenzuela<sup>a</sup>

<sup>a</sup> Pontificia Universidad Católica de Chile, Chile

<sup>b</sup> Universidad Santo Tomás, Chile

### ARTICLE INFO

#### Article history:

Received 25 July 2012

Received in revised form 24 September 2012

Accepted 3 January 2013

#### Keywords:

GMO controversy

Farmers

Hybrid epistemology

Chile

### ABSTRACT

There is a growing interest in understanding how different actors involved in debates regarding GMOs produce, justify and mobilize evidence in the face of the 'unknown unknowns' put forward by this technology. Moreover, and in line with the STS literature on the role of non-expert knowledge and concerned groups in the shaping of GMO regulations, there is an ever-increasing interest in understanding how non-scientific actors – for example anti-GMO or groups or non-industrial farmers – create and legitimize an 'evidential culture'.

In this paper we analyze the case of the emergent controversy over GMOs in Chile. Expanding on the concept of civic epistemology and based on in-depth interviews and document analyses, we specifically examine how a key sector in the debate – medium and small farmers – frames its evidences regarding GMOs, what type of trials they mobilize, and which political strategies are fleshed out.

Our preliminary findings suggest a very particular epistemic configuration, one that we call hybrid epistemology: a mix epistemology in which free-market claims are entwined with state intervention demands, consensual political strategies are mixed with perceptions of strong power inequalities, and science-based rationalities are entangled with experiential and intuition-based knowledge.

Finally, the paper opens a question about the epistemological impacts of the Chilean neoliberal experiment on the positions of farmers regarding GMOs.

© 2013 Elsevier Ltd. All rights reserved.

### 1. Introduction: what do we talk about when we talk about farmers in Latin America?

GM products and seed research undertaken by corporations only aim to increase their profits and not the population's welfare [...] The dominance of biotechnology and the use of GMOs is moving towards a world seed oligopoly controlled by just eight major economic groups [...] Farmers will completely lose control of seed use and will be totally dependent on

multinational corporations. (Movimento Sem Terra 2003, in Ref. [44] p. 50)

The Brazilian Movimento Sem Terra (MST) is a prime example of the expected position of small and medium farmers regarding the GM crop debate in Latin America and the developing world at large. For the MST the development of a GM-based agriculture is, above all, an attack to their cultural heritage, labor dynamics and socioeconomic ties. The MST contestation to GM development is not just based on technical arguments about the economic benefit of GM crops or their potential environmental and health risks. As implied in the above citation, MST's query challenges the worldview implicitly and explicitly imposed by the GM sociotechnical arrangement. It thus questions

\* Corresponding author. Pontificia Universidad Católica de Chile, Instituto de Sociología, Av. Vicuña Mackenna 4860, Campus San Joaquín Macul, Santiago, Chile.

E-mail address: [metironi@uc.cl](mailto:metironi@uc.cl) (M. Tironi).

how agriculture's significance is defined, which forms of knowledge are prioritized, and what should be the form and content of a politics of rural empowerment. In brief, the contestation to GM technologies becomes a wider "act of social resistance" ([38] p. 3).

The case of Chile replicates, in many senses, the Brazilian framing. Chilean medium and small farmers also challenge key features and assumptions of GM developments – market liberalization, power inequalities and the marginalization of local knowledges. However, our analysis shows that despite this contestation, Chilean farmers are not averse, even when opposing GM technologies to market dynamics, technological development and scientific reasoning, nor to political actions enclosed within consensual and institutionalized spaces. Chilean farmers put forward a neoliberalized idea of agricultural organization, their political role within the public arena, and the knowledge economy they (ought to) mobilize. In this sense, Chilean farmers do not *resist* the dominant epistemology that groups like the MST attack; they *foster* it.

In order to understand how small and medium farmers in Chile cope with and make sense of GMOs we expanded on the concept of civic epistemologies [28,36] and applied it to subnational and controversy-oriented publics. Applied in this way, the notion of civic epistemologies serves as an analytical tool to understand particular collective knowledge framings, associated with specific ways of ordering economic, political and scientific claims vis-à-vis broader webs of meaning. Specifically, we claim that Chilean farmers mobilize an epistemology in which contradictory understandings regarding the political, economic and scientific nature of GMOs co-exist. This hybrid (civic) epistemology indicates the pervasiveness of neoliberalism in the country, but also how civic epistemologies, when looked from the micro-sociological perspective of discourses and practices, defy well-structured and coherent "styles". Thus the case of Chile calls for a thorough revision of how farmers are understood and played out in the accounts on the GMO controversies in Latin America. In the next section we summarize how the position of farmers regarding Agbio technologies has usually been framed. In this section we also develop a more nuanced definition of civic epistemologies. In the third section we briefly describe the Chilean case, highlighting the process of neoliberalization experienced by the country since the 1970s, its regulatory framing on GMOs, and key aspects of the controversy. Next we make a few comments on our methodology to then turn to our results, describing how Chilean small and medium farmers assembled their epistemologies – economic, political and scientific. Finally, we present concluding remarks regarding the hybrid nature of Chilean farmers' epistemologies.

## 2. The GMO controversy, civic epistemologies and the purified farmer

Almost twenty years after the introduction of the first genetically modified food into the market, the debate over genetically modified organisms (GMOs) remains contentious [33]. Far from having reached a consensual stage, the discussion seems to be ever more polarized, intense and

conflictive [9,10,20,25,33]. As with other iconic technological innovations [5], there is no public consensus about the risks and benefits involved in the use of GMOs. This is due, in part, because incumbent parties have multiplied, but also because these concerned agents often frame their claims as a mix of economic, agricultural, ethical, environmental, political, ecological and cultural issues, thus assembling a complex web of positions, arguments and facts. In this context, it has become increasingly important to understand how different actors put forward and operate from particular civic epistemologies or the modalities through which different actors understand and order the world in relation to political, economic and scientific objects, evidences and framings [28,36]. This definition, while based on Jasanoff's accounts, expands and reorients civic epistemologies in ways that are worth explaining.

### 2.1. Towards a controversy-based definition of civic epistemologies

In this paper we borrow and expand on Jasanoff's concept of civic epistemology and apply it to subnational publics arising from specific policy controversies. Epistemology is concerned with the production of knowledge: with how we get to know our world and what practices are deployed to do so. Emphasizing knowledge production and framing, epistemology involves social and material processes that include (and create) perceptions and opinions, but that cannot be reduced to them. A discrete perception of an object is embedded in larger modes of knowledge ordering, or what Tsing [54] calls worlding: processes by which we attribute worldlike characteristics to our realities. In this sense, perceptions are always entwined in and are dependent on the worlds we enact to make sense of our experience – and the knowledge mobilized to deal with it. This is why Miller [36], in his review of the literature on civic epistemologies, asserts that knowledge co-produces the "social and political arrangements" of its production and application. A focus on epistemology, then, allows for an understanding of the political orderings that validate perceptions and opinions.

The connection to political arrangements and ordering is of vital importance for the notion of civic epistemology. This is, indeed, the *raison d'être* behind the prefix "civic." For civic epistemologies are concerned with a particular kind of knowledge-making processes: those that are related to how publics assess scientific claims [10,27,28]. For Jasanoff civic epistemologies have two distinct features: while they are bounded to a specific social realm (scientific claim-making and -assessment) they are part of the broader cultural framework of a given society. According to Jasanoff "these collective knowledge-ways through which [publics] assess the rationality and robustness of claims that seek to order their lives" ([25] p. 255) are institutionalized and systematic practices that are embedded in – and are part of – national political cultures. Or put differently, the scale of civic epistemologies is the nation-state. Civic epistemologies are the result and a representation of how different national societies have historically organized their public knowledge-making, public accountability, demonstrations practices, objectivity registers, expertise foundations and the visibility of expert bodies [27,28].

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات