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**Tactical Alliances: Science-Based Authoritarian Populism**

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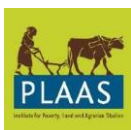
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# Tactical Alliances: Science-Based Authoritarian Populism

*Barbara Van Dyck and Saurabh Arora*

## Introduction: Save Our Science<sup>1</sup>

On April 22<sup>nd</sup> 2017, possibly a million people<sup>2</sup> in 35 countries marched for science with banners, placards and signs reading “Trust Scientific Facts, Not Alternative Facts”, “Science Reveals Reality”, “the Good Thing about Science is that it is True, whether you Believe it or not”, “Stand up For Science”, or “Science Belongs to Everybody”.<sup>3</sup> The idea of marching for science emerged in the US only days after Donald Trump took presidency.<sup>4</sup> In the US, March for Science organizers sought to direct attention to the announced budget cuts and what they saw as a “growing disregard for evidence-based knowledge”.<sup>5</sup> The impression of a “rising anti-science culture”<sup>6</sup> resonated with scientists and science advocates worldwide. More than 600 marches were organized in parallel in 6 continents. By going into the streets, the scientists became and joined “the people”. Sciencemag collected quotes from people in different countries and asked them why they participated in the march. Barone, an Italian marcher, said that politicians should trust scientists more. Schroeder from Austria says,

*It’s important to advocate for science. Anti-enlightenment sentiments are rising worldwide. Many Austrians are against genetic engineering but don’t know what a gene is, for instance. I have a problem with that. It’s almost fashionable to be against science nowadays.<sup>7</sup>*

In these popular marches, Science (and knowledge) was paraded as if it is something unified and singular. Such a populist framing of science eviscerates differences in the ethos of corporate, public and citizen sciences, as well as in the content of sciences geared toward the extension of war (against nature) and those promoting genuine sustainability, peace and justice (Serres 1995). This unification of disparate sciences as Science is convenient for multiple purposes. It facilitates the: a) simplification of political discourses on knowledge by furthering the dichotomy between ‘scientific evidence’ and ‘public opinion’, which can be used to disqualify and silence ‘unscientific’ opposition, while mobilizing selective facts and artefacts for policy- and profit-making activities; b) extension of unidirectional economic progress ostentatiously in everybody’s interest, which is based on Scientific progress, while marginalising plural possible directions of progress in any discipline (Stirling 2009); c) the separation of Science (and technology) from the future it shapes, and the past it is a product of, by demanding that we trust the general truth of scientific facts themselves, rather than scrutinize the heterogeneous practices that make and use the facts. Overall, the unification of disparate sciences as Science, we argue, is part of an array of mutually-reinforcing tactics deployed by alliances between specific scientists, policymakers and sections of the public to silence dissent and marginalise difference. This is what we term Science-based authoritarian populism. In order to illustrate our arguments, we focus on the dynamics at play around the development and execution of field trials with

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<sup>1</sup> “Save Our Science” Ainissa Ramirez at TED <https://blog.ted.com/a-sputnik-moment-for-stem-education-ainissa-ramirez-at-ted2012/>, <http://sauvonslarecherche.fr> An association of scientists active in France since 2003 – mainly in relation to public funds. In Belgium, scientists mobilized the “Save Our Science” banner in 2011, in reaction to a direct action on a field trial with GE potatoes [http://www.vilt.be/Wetenschap\\_verdedigt\\_ggo\\_veldproef\\_met\\_Save\\_Our\\_Science](http://www.vilt.be/Wetenschap_verdedigt_ggo_veldproef_met_Save_Our_Science)

<sup>2</sup> <https://medium.com/marchforscience-blog/the-science-behind-the-march-for-science-crowd-estimates-f337adf2d665>

<sup>3</sup> Suggestions for signs to bring to the march were provided (consulted January 30, 2018): <https://i.pinimg.com/originals/22/30/b1/2230b15a59a6e2a75afc1f248b6520ad.png>

<sup>4</sup> <https://www.marchforscience.com/our-history>

<sup>5</sup> <https://www.reuters.com/article/us-earth-day-usa-march/march-for-science-draws-big-crowds-clever-signs-across-u-s-idUSKBN17O09F>

<sup>6</sup> <http://indianexpress.com/article/technology/science/anti-science-culture-is-growing-need-to-engage-and-educate-say-nobel-laureates-4471690/>

<sup>7</sup> <http://www.sciencemag.org/news/2017/04/marchers-around-world-tell-us-why-theyre-taking-streets-science>

genetically engineered (GE) poplar trees in Flanders, the north of Belgium. Poplars have been genetically engineered to enhance their industrial performance in the process of transforming biomass into ethanol, plastics and other materials. We show how, by using opinion articles in scientific magazines, targeted public communication and lobbying activities, scientists and their allies disqualify opposition to the GE trees. The opposition's attempts to intervene in the debate around GE are portrayed as disregarding robust evidence provided by the scientific community, a threat to scientific progress, to economic progress, and consequently to humanity at large.

### **Conceptualising alliances, tactics and circulations**

Central to any understanding of authoritarianism, with or without its attachment to populism, is power. And clearly there are many ways to develop an understanding of power, including those based on relations (Foucault 2000), structuration (Giddens 1984), fields (Bourdieu 1984), assemblages (Deleuze and Guattari 1987), and networks (Latour 2005). In this paper, we treat power as asymmetrically structuring capacity to act (Stirling 2014), geared toward training, conditioning, disciplining, controlling, marginalizing, barring, silencing and dominating other humans and nonhumans. We approach this capacity relationally, assembled through the building of alliances. Power comes to vest in the network of alliances built between heterogeneous actors such as scientists, public policymakers, private firms, and sections of the public. And it is sustained through the circulation of specific entities within the network of alliances, while the network provides the setup that makes "circulation possible in the first place" (Latour 2013: 42). The circulating entities we focus on, include techno-scientific facts, dictates of the knowledge economy, and emotional and moral (often nationalist) rhetoric. We posit that the circulation of these entities, and the resulting concentration of power in the alliance, is facilitated by the use of two tactics: purification and reinforcement.

The circulating entities are made mobile using the tactic of *purification* (Latour 1993), which aims to disentangle them from the messy complexity of the socio-material processes in which they are actually produced and used. For example, scientific facts produced and used in complex processes are circulated as 'purified' objective evidence, independent of any interference from societal forces (Latour 1993). In a similar vein, innovation-based economic dictates are purified when making abstraction from inequality, risks of innovation, deskilling, individualization, etc. (Callon 1998, Mitchell 2005). Yet the actual processes of making and using the facts (about the economy or genetic engineering) are hybrid, requiring continual translation between socio-cultural forces (such as economic interests, government regulations, political stakes) and natural entities. In this tactic of purification, attempts are thus made to de-problematize facts, by eviscerating all 'social' influences on the use of facts and on fact-making from the scientists' cultural location, their (funders' and partners') interests and any regulatory pressures they might be subject to. Even the uncertainties associated with the facts in circulation may be obscured (Wynne 1992). This purification tactic deployed by the network of alliances is also essential for disqualifying opposing voices in society, by classifying them as mere opinions (Stengers 2000).

In our conceptualization of authoritarian populism, in addition to purification, a second tactic is necessary to sustain and concentrate the power of the network of alliances between heterogeneous actors. We term this tactic *reinforcement*. The deployment of this tactic allows the network to combine with each other the different purified entities in circulation, such as facts and economic dictates. This combination is aimed at making the circulating entities mutually-reinforcing. The tactic of reinforcement may require the circulating entities (including scientific evidence) to be adjusted to work in alignment each other, for enhancing the capacity of the network of alliances to silence dissent and marginalise difference. It is by doing the latter that a network of alliances manifests as authoritarian populism.

### **Trees, entangled in genetic engineering**

In the journal *Trends in Biotechnology*, scientists from the University of Ghent and the Flemish Institute of Biotechnology (VIB) recently shared their personal experience in organising science

communication to inspire their colleagues “to engage with the public” (Blancke, Grunewald and De Jaeger 2017: 185). They affirm that scientists’ voices are *a priori* the qualified ones needing more space in public debates:

public debates concerning GE [genetic engineering] include discussions about safety for humans, animals, and the environment, topics that a scientist usually feels comfortable talking about. However, quickly enough, he or she will find him- or herself discussing a wider variety of topics, including the desirability of the use of pesticides agricultural policies, small farmers versus multinationals, patents, politics, food production, and so on. Because of this complexity, debates concerning GE have evolved to a point where effective participation requires a substantial learning curve that deters the participation of qualified voices. (p185).

To “lay public concerns to rest” they propose a method to purify genetic engineering, which they developed through lectures for ‘lay public’ as well as students. This method of public engagement consists in getting across the central message that genetic engineering is “only a genetic improvement method, or rather a set of methods – nothing more, nothing less.” In doing so, the authors seek to acknowledge people’s concerns on patents, pesticide, small farmers, multinationals, etc. as legitimate, while decoupling these concerns from the techno-science of genetic engineering. The reason why people normally fail to discriminate between the techno-science and its application, according to the authors, is their reliance on intuitive reasoning (cf. Blancke et al. 2015). By asking people to isolate their concerns from the techno-science itself, the authors hope to reduce the ‘problem’ of public resistance.

This separation of technology from (concerns about) the futures it is shaping, is a tactic we conceptualised as purification above. Only by hybridising genetic engineering, for example through the construction of field trials with genetically modified organisms (GMO) as “a social problem” (Bonneuil et al. 2008), can we render visible and intervene in the politics of GMO controversies (for an example see Krom et al. 2014). Such interventions can come in the form of guidance on more holistic assessment of GE, by identifying and assessing a wide range of socio-economic, cultural and ethical considerations in biotechnology governance (Preston and Wickson 2016, Wickson et al. 2017).

Since 1986, Belgium has authorized 168 GMO field trials.<sup>8</sup> Until 2002, private companies such as Plant Genetic Systems NV, Aventis Cropscience NV and Monsanto Europe organized the majority of these trials (Pilate et al 2016). In 2003, after the Ministers for Public Health and the Environment decided to reject three field trials with GE apple trees, after activists had interfered with a number of field trials,<sup>9</sup> and when new European legislation was being translated into national regulation, industry announced that it would no longer conduct GMO field trials in Belgium.<sup>10</sup> After a few years of radio silence, the demands to carry out GMO field trials resumed in Belgium in 2007 (with GE poplar in 2007 and 2013, with GE potatoes in 2010, 2010, and with GE corn in 2011, 2014 and 2017). In this latest wave of GMO field trials, the public sector took the lead in handling the application procedures and the operationalization of the experiments.<sup>11</sup> All of the applications have been contested, some more extensively than others. All of the applications have been granted permission. For the purpose of this paper, we focus exclusively on the information that circulates in the public domain relation to the voluntary dissemination of GE poplars on two outdoor test fields.

Since 2009, two field trials with lignin modified GE poplar are being carried out in Belgium. This focus on GE tree development is part of “the trend to use plant biomass as a renewable source for

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<sup>8</sup> <https://www.biosafety.be/content/notification-field-trials-gm-plants-belgium-some-figures>

<sup>9</sup> <http://www.fieldliberation.org/en/2012/01/10/chronologie-van-de-directe-actie-tegen-ggos-in-belgie/>

<sup>10</sup> Belgo Biotech (2002) CP. L’industrie belge de la biotechnologie n’effectuera pas de nouveaux essais en champ en 2003. Consulted 5-02-2018 <http://users.skynet.be/vita-vitalis/2002%2012%2019%20Belgio%20Biotech%200communiquede%20presse%20fr.htm>

<sup>11</sup> One exception is BASFs demand to test 4 Fortune GE potatoes on a public test field. A separate approval was requested for these potatoes due to issues of commercial secrecy.

liquid biofuels and bio-based materials” (Van Acker et al. 2011: 123). To make agrofuels and plant-based materials such as plastics from trees, plant biomass is processed into fermentable sugars. The presence of lignin, a crucial structural component of trees, makes current processing costly and energy intensive. By altering the composition or reducing the content of lignin, fibers can be made more susceptible to chemical degradation processes, thereby improving the trees’ industrial performance in paper and ethanol production. For research and development purposes, poplars are popular because of a combination of desirable biological traits, such “as a modest genome size, facile genetic transformation, ease of vegetative propagation, rapid growth response after experimental treatments and a short generation time compared to most other forest trees” and their commercial potential for short-rotation plantations (Ellis et al. 2010 : 5). The engineering techniques used to genetically modify the poplar’s lignin are argued to be possibly general. In a patent application in relation to lignin alteration, Belgian researchers include a wide range of tree species.<sup>12</sup> GE trees are not widely available for commercial use. Industrial tree plantations with transgenic Bt-poplars modified for insect resistance and enhanced growth have, however, operated in China since 2002.<sup>13</sup> The Israeli company FuturaGene recently secured approval to commercially exploit transgenic eucalyptus, engineered for yield-enhancement for paper production, in Brazil.<sup>14</sup> At the same time, ArborGen has been unsuccessfully pushing for the deregulation of freeze-tolerant GE Eucalyptus in the United States. Eucalyptus plantations are known for being water draining (Calder et al. 1997) and highly flammable. In the summer of 2017, eucalyptus plantations were blamed for the catastrophic fires in Portugal and Galicia.<sup>15</sup>

### Public scientists: wings of the knowledge economy

The Flemish minister of economy, innovation and sports, Mr Muylers, refers to excellence in scientific research as one of the spearheads for creating a strong Flemish economy.<sup>16</sup> ‘Scientific Excellence’ is used as an asset that is circulated, sold and speculated upon, to stimulate economic growth in the knowledge economy. In the government’s toolbox, measuring the societal impact of biotechnology research is reduced to science-based value creation (sometimes measured in jobs) through R&D as well as public-private partnerships, capital investment, establishment of new and the attraction of existing companies in Flanders, and bringing new products to the market.<sup>17</sup>

An important tool for the tactic of reinforcement is the multi-site interuniversity Flemish institute for biotechnology (VIB). This organization that carries out and handles the bureaucratic procedures for the GE poplar field trials, brings together researchers from several university departments, government representatives and industry. The Flemish government took the initiative to establish and fund the VIB in 1995 to work towards excellence in biotechnology research and transform the research results into

<sup>12</sup> The patent that is owned by W. Boerjan (VIB), University of Ghent team members and the company SweTreeTechnologies refers to “all plants with altered lignin content by genetically manipulating expression of a PIRIN gene”(patent US20170247715A1). According to the invention the plant is preferably a hardwood selected from the group consisting of acacia, eucalyptus, hornbeam, beech, mahogany, walnut, oak, ash, willow, hickory, birch, chestnut, poplar, alder, maple, sycamore, ginkgo, palm trees, and sweet gum; a conifer selected from the group consisting of cypress, Douglas fir, fir, sequoia, hemlock, cedar, juniper, larch, pine, redwood, spruce, and yew; a fruit bearing plant selected from the group consisting of apple, plum, pear, banana, orange, kiwi, lemon, cherry, grapevine, papaya, peanut, and fig; or selected from the group consisting of cotton, bamboo, rubber plants, corn, rice, wheat, barley, *Miscanthus*, sorghum, ryegrass, sugarcane, and switchgrass.

<sup>13</sup> <http://www.fao.org/docrep/ARTICLE/WFC/XII/0280-B2.HTM>

<sup>14</sup> <https://labiotech.eu/futuragenes-genetically-modified-eucalyptus-approved-in-brazil/>

<sup>15</sup> <http://wildfiretoday.com/2017/08/12/eucalyptus-trees-contribute-to-portugals-wildfire-problem/> , <https://www.politico.eu/article/portugal-fire-eucalyptus-killer-forest/>

<sup>16</sup> <http://www.vib.be/en/news/Pages/Excellence-in-scientific-research-as-one-of-the-spearheads-for-creating-a-strong-flemish-economy.aspx>

<sup>17</sup> <http://www.vib.be/nl/nieuws/Pages/VIB-matinee-in-het-Vlaams-Parlement-Vlaamse-Regering-investeert-fors-in-VIB-.aspx> , see also “De Vlaamse Minister van Werk, Economie, Innovatie en Sport. Nota aan de Vlaamse Regering. Betreft: Ontwerp van convenant tussen het Vlaamse Gewest en VIB”

marketable products. The government's main expectation is that the centre brings economic power to the region through its research activities, job creation and the attraction of foreign investment.

Circulating the economic dictates of its innovation-led growth policy, the Flemish government establishes 5-year contracts with the institute, which employs close to 1500 researchers at the time of writing. The contract fixes the institute's budget, its strategic goals and *key performance indicators* (KPI) to evaluate the institute's performance.<sup>18</sup> The budget increased by 33% at the last allocation in 2016. It will reach up to 59 million euro/year, between 2017 and 2022. The increase in VIB's budget, at a time of austerity cuts in public health, employment support, pensions and public administration, is justified as "necessary to remain competitive in times where top-research requires more than ever, expensive and ultra-modern material and facilities".<sup>19</sup> The Flemish government's support amounts to slightly less than half of the institute's budget, with the rest coming from the institute's income from patents and use-licences, industrial cooperation and European research grants. The researchers are subject to criteria that measure their (economic) performance in an 'objective' way, to organize competition between the institute and other research organisations, as well as between VIB's own research groups.

In the alliance between the Flemish government and the VIB, what is circulated is not what is actually done in the name of techno-science, or even the 'facts' produced, but rather the researchers' performance assessed according to 'objective' standards of excellence. These include the criteria that publications are written and published in international top journals (KPI 1 and KPI 2), that publications are cited (KPI 3), that doctoral degrees are granted (KPI 4), that patents are acquired (KPI 5), that partnerships with industry are created (KPI 6), that translational research is promoted (KPI 7), that start-ups are created (KPI 8), that other financial return is generated internationally (KPI 9), that partnerships with industry leads to financial returns (KPI 10) and that economic impact is strategized for. These KPI's are circulated in the alliance as well as to recruit sections of the public, sometimes accompanied with glorious metaphors: for example at the public event in the Flemish parliament for the renewal of the 5-year contract, VIB leaders highlight their performance by claiming that they are indeed "playing in the champions league".<sup>20</sup>

To achieve its strategic goal of economic impact, the VIB organises special services, such as a *Grand Challenges Program* and a *VIB Discovery Team*, to *de-risk* its science beyond the academic proof-of-concept into applications. The institute signs research collaboration or technology licence agreements with existing corporations and establishes start-up/spin-off companies to transform the scientific discoveries into marketable products. It is the founder of a start-up venture capital company, *V-Bio Ventures*, which "intends to build a portfolio of companies drawn from both VIB's research pipeline and elsewhere".<sup>21</sup> Legitimised by the circulating dictates of innovation in the knowledge economy, these instruments in combination with tax incentives and financing options<sup>22</sup> are geared toward making the public sector into a lead risk-taker, with the idea that private companies will follow once financial returns are clearly in sight (Mazzucato 2016).

Agro-chemical companies such as BASF and Bayer are represented in the institute's general management and general assembly. A retired CEO of the multinational Janssen Pharmaceutica chairs the board of directors. Three agrochemical global players, Bayer Crop Science, BASF and Syngenta co-locate their R&D activities in the technology park that is hosting the VIB. "*This proximity, creates confidence as people know each other and it facilitates cooperation*", affirms W. Boerjan, the VIB's

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<sup>18</sup> Convenant tussen het Vlaamse Gewest en VIB 2017 - 2021

<sup>19</sup> De Vlaamse Minister van Werk, Economie, Innovatie en Sport. Nota aan de Vlaamse Regering. Betreft: Ontwerp van convenant tussen het Vlaamse Gewest en VIB.

<sup>20</sup> <http://www.vib.be/nl/nieuws/Pages/VIB-matinee-in-het-Vlaams-Parlement-Vlaamse-Regering-investeert-fors-in-VIB-.aspx>, 1/03/2017, personal notes

<sup>21</sup> <http://www.vib.be/en/business-opportunities/spinoffs/Pages/V-BIO-Ventures.aspx> consulted 5th of February 2018

<sup>22</sup> <https://www.flandersinvestmentandtrade.com/invest/en/news/highlighted-bio-2017-why-belgium-biotech-hotspot>

principal GE tree investigator at a public event (for which students receive study credits if they attend). Purifying out all of the collective effort and public money that has gone into the creation of what is now a agro-biotech cluster in Flanders (Segers 2017), Boerjan states that the industry “*even finances part of the research at VIB, and as such takes away a burden on tax money.*” This should “*obviously not lead to prostitution*” but the scientist assures the audience that at VIB they “*have the maturity for that*”.<sup>23</sup> To develop the skills needed to thrive in a hybrid R&D environment, VIB employees receive in-house training, mentoring and coaching to develop entrepreneurial, negotiation and communication skills to enhance the institute’s performance.<sup>24</sup>

### Science-based nationalism

Since 2007, GMO field trials have become part of the VIB’s instruments to facilitate technology transfer to industry. Under European regulation, field trials are a necessary step to make the leap from the laboratory to real world experiments.<sup>25</sup> Field trials are also one way in which transgenic plants are made tangible for industry and the wider public. They serve as a billboard for the network of genetic engineering alliances, through which they practise science “communication by doing” (Krom et al. 2014: 9). Field trials are useful “*to capture the bio-refinery industry imagination by showing them, ‘here they are, try it’*”,<sup>26</sup> explained the principal investigator of the GE poplar field trial in a public *Science Meets Life*-event.

While field trials appear to be crucial entities for the network of GE alliances, through which they assemble and sustain their power, they are also moments in which formal decision-making and public consultations can interfere in the techno-science development process, to help obliterate the purity of the ‘facts’.

In 2009, Nature Biotechnology published a news item titled “GM poplars to grow next door”.<sup>27</sup> The short piece referred to a field trial that the VIB wanted to carry out in Belgium with poplars that had been genetically engineered to reduce their content in lignin. The Belgian biosafety council had given a positive advice for the trial, given some biosafety measures such as fencing the field and removing flowers would be taken into account. The Flemish minister for the environment backed up this advice. Greenpeace and most of the 105 citizens that had participated in the public consultation procedure for the trial, advised the ministers to not grant permission. While agreeing that the individual field trial may not constitute a big threat for the environment, they warned that the field trial is a step towards commercialisation of GE trees in monoculture plantations. The latter would entail large environmental risks and draw attention away from more long-term climate solutions such as changing consumption patterns.<sup>28</sup> The Federal ministers, both from the French-speaking social democratic party, finally refused the permission saying that it was “too early” to set up field trials with GE trees. The public consultation had also highlighted concerns about the use of agro/biofuels more generally. As a consequence, the Federal ministers decided to prioritize the establishment of a policy framework that would allow for wider public debate about biofuels and their socio-economic implications, before carrying out field trials.<sup>29, 17</sup>

This decision caused a communal politic conflict in Belgium. Some outraged Flemish members of parliament (MPs), as well as the regional minister for economic development and innovation, accused the federal ministers of marginalising Flemish scientific research and hindering Flemish

<sup>23</sup> [http://www.vib.be/nl/biotechdag/Paginas/Biotechtour2016\\_2017.aspx](http://www.vib.be/nl/biotechdag/Paginas/Biotechtour2016_2017.aspx) 14/12/2016, Personal notes.

<sup>24</sup> The VIB HR strategy is inspired on the principles of the Strategy4Scientists program. <https://career.ucsf.edu/Strategy4Scientists>

<sup>25</sup> <http://www.europarl.europa.eu/sides/getDoc.do?type=CRE&reference=20080925&secondRef=ANN-01&language=NL&detail=H-2008-0685&query=QUESTION>

<sup>26</sup> [http://www.vib.be/nl/biotechdag/Paginas/Biotechtour2016\\_2017.aspx](http://www.vib.be/nl/biotechdag/Paginas/Biotechtour2016_2017.aspx) 14/12/2016, Personal notes. VIBs use of field trials as communication tool has been shown earlier by Krom et al 2014

<sup>27</sup> Birch, H (2009) GM poplars to grow next door. Nature biotechnology 27, 107

<sup>28</sup> <http://www.greenpeace.org/belgium/nl/nieuws/nieuws/poplartree/>, [http://www.vilt.be/Greenpeace\\_countert\\_positief\\_advies\\_ggo-populieren](http://www.vilt.be/Greenpeace_countert_positief_advies_ggo-populieren)

<sup>29</sup> <https://www.youtube.com/watch?v=6q7HAYQ7Loo>



environmental innovation.<sup>30</sup> MPs from the Flemish nationalist party, the Flemish Christian democrats and liberals alike wanted to know what scientific evidence had been used by the federal ministers.<sup>31</sup> The GE trees were even tabled at the interregional negotiations as a conflict of interest. While highlighting Flemish communal interests, none of the vocal MPs seemed to consider public concerns as valid inputs into political decision-making.

VIB contributed to the public debate with alarming messages of “shrinking scientific advancements”.<sup>32</sup> Science is portrayed as the victim of politics when the refusal of the permit is framed as “a heavy blow for scientific research for sustainable production of bio-ethanol”.<sup>33</sup> VIB appealed against the federal decision at the Council of State. The Flemish minister of economic development and innovation backed them up. She told the biggest elite newspaper in Flanders that:

the field trial can wait no longer, as experiments with second generation biofuels that don't compete with food provision are taking place all over the world. VIB is a pioneer in the field. Other countries will catch up if the field trial can't rapidly take place. The economic losses and reputation damage will be un-reparable.<sup>34</sup>

Eventually, the Council of State ruled that the federal ministers' refusal of field trials was unjustified. Two of the three arguments that had been developed to refuse the authorization related directly to biosafety issues, namely the absence of a protocol to monitor impact on soil microorganisms and the use of an antibiotic resistant marker. The third argument to refuse the trial was the absence of an administrative framework that enables the consideration of the socio-economic concerns that had been voiced. The latter argument was not legally justifiable according to the Court of State, considering the serious losses in terms of hindering the valorisation of research, and Belgium's international profiling in the biotechnology sector.<sup>35</sup>

Here, it is clear that a decision regarding the introduction of GE field trials is not strictly limited to scientific biosafety facts, as purifications that exclude any socio-economic arguments. The decision actually prioritises the safeguarding of a safe climate for private investment, in the production and use of scientific research, over public objections on the selected (GE) innovation pathway. Purified economic dictates of the knowledge economy are thus used to reinforce the scientific 'facts' on biosafety.

Eventually, the policy framework that would allow for wider public debate about the use of GMOs in agriculture or as agro-fuels never got established and the field trial took place. The trees showed decreased lignin content, as well as a reduced biomass yield (Van Acker et al. 2014). So the scientific breakthrough behind improved bioethanol production didn't turn out to be reality. The political battle to obtain the permit for the GE poplar field trial, however, was important. Since this political conflict in 2007-9, and in spite of public contestation, no more field trial permits have been refused. The circulation of purified field trials, reinforced by economic dictates, thus continues to be unhindered in the network of GE alliances.

Attempts to resist this circulation appear to be futile. For example, granting permissions for a new field trial with GE trees a few years later (2013) was objected to, by two experts of the biosafety council while three experts advised positively. The seven remaining experts, which include a representative from VIB, did not evaluate the file, and no formal meeting had been held about the file. Consequently, P. Baret, one of the experts opposing the field trial, wrote on his personal website “without deliberation/discussion, consensus nor vote, the Belgian council for biosafety emits a

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<sup>30</sup> <https://www.youtube.com/watch?v=6q7HAYQ7Loo>

<sup>31</sup> <https://www.dekamer.be/doc/PCRA/html/52/ap042.html>

<sup>32</sup> [http://www.vib.be/nl/educatie/Documents/VIB\\_Dossier\\_Populier.pdf](http://www.vib.be/nl/educatie/Documents/VIB_Dossier_Populier.pdf)

<sup>33</sup> [http://www.vib.be/nl/educatie/Documents/VIB\\_Dossier\\_Populier.pdf](http://www.vib.be/nl/educatie/Documents/VIB_Dossier_Populier.pdf)

<sup>34</sup> <https://www.standaard.be/cnt/b25320461080726>

<sup>35</sup> <https://www.bioveiligheid.be/sites/default/files/b-be-07-v2-decision-council-of-state.pdf>

favourable opinion for a field trial with transgenic poplars in Flanders”.<sup>36</sup> Two experts contested the use of antibiotics resistant markers in the GE trees and more generally the incompleteness and prejudiced nature of the application file. The expert criticized the quality of the content of the application, which did not contain any quantitative information or proper risk assessments. As a consequence, even a rigorous scientific evaluation of the GE trees, using different sciences, was made impossible. Yet the biosafety council advised the ministers, that in relation to the field trial “risks for the environment, the health of animals or humans are very unlikely”.

Similar fate was faced by sections of the public contesting the trials in the biosafety evaluation of the field trial. While social or economic considerations are beyond the scope of the biosafety evaluation, most of the 4305 persons that participated in the public consultation,<sup>37</sup> questioned the relevance or the desirability of the very existence of GE trees to boost industrial performance of tree plantations. Mainstream media also reported flaws in the procedure. Some members of parliament and activists questioned the ministers of environment, agriculture and the minister of health. Activists also called for a “second round of public consultation” because of the problems with the democratic functioning of the biosafety council, recent new evidence that was published about the possible impacts of GE trees and the absence of consensus about the field trial among scientific experts members of the council.<sup>38</sup> The competent ministers were not hindered by the public contestation, nor by the problems in the democratic function of the biosafety council, and granted permission to plant the trees anyway.<sup>39</sup> The chair of the biosafety council and the two ‘dissenting’ experts left the biosafety council.

### Scientific propaganda

The VIB “develops and disseminates a wide range of science-based information about all aspects of biotechnology”.<sup>40</sup> It proactively communicates with the press, sections of the public and politicians to “clarify ... [the] not science-based negative conclusions with regard to GMOs”.<sup>41</sup> It employs a communication team that organizes events and produces information targeting the wider public (including children – e.g., Science4Kids), students, educators, journalists and politicians. Schools can contact the VIB to bring scientists into the classroom, free of cost. Teaching materials, books and exhibitions are also made available. Brochure titles in the VIB-fact series include “the safety of GMOs”, “golden rice”, “bananas, gold from the south”, and “cotton in Africa”.<sup>42</sup> They routinely present numbers as facts while they are contested within the scientific community, as publicly pointed out by a Flemish Member of European Parliament in cooperation with a researcher from the Corporate Europe Observatory.<sup>43</sup> Circulating these purified facts, through educational and communication materials and events, the VIB and its partners attempt to extend their alliances with sections of the public.

On the *educational* section of the VIB’s website, a “scientific background document of GE poplars” can be downloaded.<sup>44</sup> The document presents biofuels as “a part of the climate solution” without any

<sup>36</sup> Baret, Philippe (2013). “Bientôt un nouveau essai peuplier en Belgique”, blog post of 22 October 2013, last consulted 30-01-2018, <http://www.philagri.net/bientot-un-nouveau-essai-peuplier-en-belgique/>

<sup>37</sup> [https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth\\_theme\\_file/2013\\_synthese\\_consul\\_public\\_b-be-13-v1\\_nl.pdf](https://www.health.belgium.be/sites/default/files/uploads/fields/fpshealth_theme_file/2013_synthese_consul_public_b-be-13-v1_nl.pdf)

<sup>38</sup> <http://www.fieldliberation.org/2013/10/18/persbericht-geknoei-en-onenigheid-in-de-bioveiligheidsraad-vergunning-voor-een-ggo-bos-in-vlaanderen-wordt-moeilijk-het-field-liberation-movement-roept-op-voor-een-tweede-adviesronde-in-het-populi/> Consulted online 2018-01-30

<sup>39</sup> [http://www.fieldliberation.org/wp-content/uploads/2013/10/onkelinx\\_wathelet\\_antw\\_clean.pdf](http://www.fieldliberation.org/wp-content/uploads/2013/10/onkelinx_wathelet_antw_clean.pdf)

<sup>40</sup> <https://vibvzw.jobsoid.com/p/aboutus>, consulted online 2018-02-05

<sup>41</sup> Idea Consult & Dialogic (2016). Evaluatie van VIB. Bestek nr. EWI-2015-04. Eindrapport punctuele evaluatie VIB, juni 2016 op vraag van Vlaamse Overheid. Departement EWI

<sup>42</sup> for an overview <http://www.vib.be/en/about-vib/plant-biotech-news/Pages/default.aspx>

<sup>43</sup> Staes, B & Holland, N. De rol van het VIB in het Belgische en Europese GGO-debat: objectieve kennisleverancier of lobbyist voor privé-gewin? 7 maart 2017 <http://www.bartstaes.be/assets/img/upload/files/pdf/OpenBrief-De%20rol%20van%20het%20VIB-05-12-2016-PDF.pdf>

<sup>44</sup> [http://www.vib.be/nl/educatie/Documents/VIB\\_Dossier\\_Populier.pdf](http://www.vib.be/nl/educatie/Documents/VIB_Dossier_Populier.pdf)

mention of the widely documented problems with tree plantations for biofuels (e.g., Barker et al. 2013, Kröger 2015). GE trees provide 2<sup>nd</sup> generation biofuels, according to the VIB, which do “not compete with food production” and “grow on marginal lands”, purifying out the reality of substantial requirements of land (taken away from alternate land uses), for industrial tree plantations.

In addition, no mention is made of adverse working conditions and health impacts on industrial tree plantations, which have been widely documented (WRM 2008). Nor are any issues noted with regard to the plantations’ intensive use of water (Little et al. 2009), pesticides and chemical fertilizers (Barker et al. 2013). With the introduction of GE trees, these impacts are expected to be exacerbated (Kröger 2014b, 2016, Barker et al. 2013). When the GE poplars didn’t really exist beyond the laboratory and small-scale field trials, the VIB background document (2008) was already asserting that “modern biotechnology enables the production of trees with less lignin, but which are perfectly healthy trees”. Here, all uncertainties inherent to scientific research (Wynne 1992; Monteiro and Rajão 2017), are obscured. Purified facts are circulated as absolute truths.

When systematically circulating information to further their alliances and their power, the VIB and its partners attempt to persuade and reassure people that the development of GE crops is the natural and most effective way forward. This makes one could wonder how this fits the mission of communicating science, to which controversies and uncertainties are central. Public engagement is also reduced to “one-way communication” rather than “a dialogue with the audience,” as observed by an international panel of expert invited to review the institute’s activities.<sup>45</sup> However, the same experts ends up recommending that the VIB’s communication team focus less on public engagement and more on *press releases* documenting important findings, policy, communication to biotech companies and schoolteachers.

The Flemish media is already rather well-fed on findings and opinions coming from inside the institute. Maesele (2011, 2015) has been investigating the discursive strategies, processes and practices in GMO-related controversies in the Flemish media for many years. His media analysis shows how the circulation of an uncritical reproduction, of news feeds from agro-biotech research institutes, in the biggest ‘elite’ newspaper in Flanders impedes democratic debate (Maesele 2015). In the aftermath of a GMO protest-action in Flanders, Maesele et al. (2015: 8) show how the newspaper created “the discursive space to ridicule counterarguments and to naturalize the principles of current large-scale industrial agricultural and food practices” by prioritising institutional sources with scientific authority. Even if many years of social movement’s efforts of hybridizing debates is occasionally reflected in news items, circulation of such purified discourses in/by the media reinforces the circulation of facts by the VIB and its allies in the government and corporations for ‘educational’ and advocacy purposes, as documented above. The circulation of such mutually-reinforcing entities does not only contribute to the creation of a discourse with a heavy pro-biotechnology bias geared toward silencing opposition, it also helps recruit sections of the public as new allies into the GE network of alliances.

The VIB’s public communication appears to start from a purified idea of scientific consensus (Maesele 2015), which does not take controversies and uncertainties into account. The information circulated by the VIB and its media allies do not take into account the hybrid complexities of knowledge production and use, and the various societal choices that might be available to steer development more democratically in multiple possible directions (cf. Stirling 2009). By omitting critical socio-economic considerations, the VIB and its state and non-state allies obscure everything that does not subscribe to the dictates of biotech-driven innovation. In this way, they make it very difficult to conduct a democratic engagement in society, about different possible futures.

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<sup>45</sup> Idea Consult & Dialogic (2016). Evaluatie van VIB. Bestek nr. EWI-2015-04. Eindrapport punctuele evaluatie VIB, juni 2016 op vraag van Vlaamse Overheid. Departement EWI, p 102

## Conclusions

In this short paper, we have documented the dynamics at play around various modes of ‘public engagement’ by scientists and their allies, before, during and after field trials for GE trees in Belgium. We argued that the network of alliances formed between research institutes, Flemish policymakers, corporations, mass media outlets and sections of the public, sustains and concentrates its power by circulating a range of mutually-reinforcing entities. The latter include techno-scientific facts, dictates of the knowledge economy, and nationalist rhetoric.

These entities are subjected to the tactic of purification by the network of alliances: to make them mobile and fit for purpose, attempts are made to disentangle them not only from the uncertainties entailed in their making and using, but also from scientific controversies and socio-environmental concerns (raised by myriad activists and some policymakers). Reinforcing multiple purified entities-in-circulation with each other, the GE network of alliances attempts to ‘naturalize’ a pro-biotechnology discourse in Flanders, in order to silence voices that understand GE trees as collectives of trees, genetic engineering, industrial plantations, financial interests or policy strategies.

The tactics of purification and reinforcement are also aimed at presenting the network’s techno-scientific pathways as the socially and ecologically viable option to address the challenges of climate change, while meeting the dictates of the knowledge economy. Alternate pathways toward socio-ecological sustainability (and justice), which do not subscribe to the same economic dictates or meet the criteria of ‘Scientific progress’, are marginalised.

These attempts to marginalise different possible pathways and silence opposition, deployed by alliances between specific scientists, policymakers and sections of the public, are hallmarks of what we term Science-based authoritarian populism.

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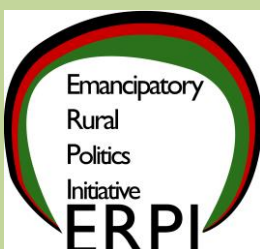
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