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Ethics and Legitimacy in the Discourse of Agri-biotechnology. A Study in Argumentation¹

Abstract: Over the last few decades, scientific research and technology have advanced at incredible speed, creating the conditions for previously unimaginable progress in all areas of life, but at the same time raising ethical concerns often exacerbated by the rapidly spreading commercial exploitation of emerging technologies. One domain where both progress and ethical questioning have been especially strong is that of genetic engineering, which so far has reached widespread application primarily in the field of agri-biotechnologies.

While having become progressively established throughout the world, agri-biotechnologies are far from being equally accepted everywhere. Objections to them range from misgivings about their moral acceptability, to fears about their possible consequences for human health, to the perceived risk of environmental damage, to the negative socio-political implications of giving a handful of seed producers what basically amounts to a monopoly on global food production. In the face of this criticism, agri-biotechnology companies have mounted a massive counteroffensive involving a sustained, coordinated rhetorical effort.

This paper explores the argumentative strategies employed by major players in the agro-biotech sector (the like of Monsanto, now part of Bayer CropScience, Syngenta and Corteva Agriscience) in order to legitimate their operations and the technologies upon which they are based. In particular, it investigates the extent to which such argumentative strategies engage explicitly or implicitly with ethical issues, and attempts to identify recurring rhetorical structures in the self-legitimizing narratives of major players in the industry. The study is rhetorical and (critical) discourse-analytical in focus and relies on pragmadialectics and the Argument Model of Topics for the analysis of argumentative patterns.

Keywords: *agri-biotechnologies, argumentation, ethics, legitimation, rhetorical strategies*

1. Introduction

In the last few decades of the twentieth century, unprecedented technological breakthroughs in the domain of genetics led to the development of engineering techniques which enabled the creation of new crop varieties. Starting from the late 1990s, after gaining approval from the FDA (the American authority presiding over the safety of foodstuff), genetically modified crops began to be commercially exploited, first in the US and then, progressively, in other parts of the world. Institutional support played a key role in fostering a climate favourable to the acceptance of genetically modified seeds and crops, especially in the US and in developing countries under its direct or indirect influence, for instance in South America. By contrast, in Europe the introduction of GMOs did not go quite as smoothly, running into a staunch opposition which eventually led to an effective moratorium on genetically modified crops. This “regulatory polarisation”, which lasts to this day, was due to multiple

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factors.² Public outrage was one of them. While such outrage was contained in the U.S., where a powerful pro-biotech coalition dominated the debate, it was much more salient in Europe, where it crucially contributed to determining a hostile political climate for GMOs. Nor was the controversy limited to the European continent; also in countries where agri-biotechnologies were taking hold (including the U.S.), a highly vocal opposition arose which succeeded (with varying degrees of success) in mobilising public opinion against the widespread use of genetically modified crops. The rise of the Internet – which began around the same time as the debate started to become salient, i.e. the late 1990s – made it possible for initially relatively marginal voices to reach multiple audiences and orchestrate highly visible anti-GMO campaigns, many of which were then picked up and amplified by mainstream media (a process which appears to continue to this day).³

Agri-biotech corporations reacted to the protests by launching their own campaigns. These were based on the overarching assumption that mistrust and opposition were due to a fundamental lack of understanding of the science at the heart of the new technologies. Grounded in a deficit view of the understanding of science, the campaigns set off to explain the mechanisms and principles underpinning GMOs, confident that better scientific literacy would result in greater acceptance of biotechnologies. This expectation, however, failed to materialise; if anything, the battle between biotech believers and their opponents became ever more polarised, with neither side willing to make concessions or come to a compromise.

Opposition to the agri-biotech industry is grounded in a whole array of motives. As Bernauer points out, agri-biotechnologies tap into a much broader set of concerns, many of them with evident ethical implications:

The controversy over green biotechnologies forms part of wider ranging societal controversies over various applications of biotechnology, notably, cloning and other biotech-related reproductive technologies, stem-cell research, xenotransplantation, transgenic animals, and genetic testing. Debates over such biotech applications also tie in with more general issues, such as world trade and globalization, intellectual property rights and the patenting of life forms, the future of agriculture, poverty and hunger, and the role of science in society. All of these issues involve clashes between natural science paradigms and political measures designed to cope with uncertainty and ethics. They also involve disputes over how to balance economic competitiveness and politically legitimate and viable regulatory systems for new technologies.⁴

In the case of GMO crops, safety issues were initially paramount, and partly obfuscated ethical concerns (which were, by contrast, given much greater salience in other areas where genetic manipulation was beginning to be used, such as animal cloning).⁵ In time, other concerns have taken over. The threat posed to biodiversity has been a key motive, with genetically modified crops having

² Thomas Bernauer, *Genes, Trade, and Regulation: The Seeds of Conflict in Food Biotechnology* (Princeton, New Jersey: Princeton U.P., 2003) 7 and ff.

³ See Ke Jiang et al., “Semantic Network Analysis Reveals Opposing Online Representations of the Search Term ‘GMO’”, *Global Challenges*, 2 (2018), 1700082.

⁴ Thomas Bernauer, *Genes, Trade, and Regulation*, 4.

⁵ In their *Improving Nature? The Science and Ethics of Genetic Engineering* (Cambridge: Cambridge U.P., 1996), Michael J. Reiss and Roger Straughan offer an in-depth analysis of the relationship between risk and ethics (ibid., 52 ff). They highlight the fact that the controversy on genetic engineering was initially dominated by safety concerns (53), but insist that issues of risk and safety cannot be separated from ethical considerations.

being accused – amongst other things – of reducing biodiversity by contaminating (and thus in time entirely replacing) non-GMO crops. On the social side, aggressive marketing in developing countries has raised fears that big corporation may force local communities to become dependent upon their seeds and support, thereby *de facto* blocking all attempts to experiment with alternative forms of development that may be more aligned with local values and traditions (and more respectful, it is argued, of the environment). In this respect, the rise of alternative paradigms of agricultural production, such as agro-ecology (with its explicit reference to ethics and sustainability) has been a powerful catalyst for protest. More recently, the debate has focused on one of the most popular pesticides used in combination with genetically modified seeds, i.e. glyphosate, a suspected carcinogenic agent. The legal battle on glyphosate has reignited the war against agri-biotech corporations and raised novel, even more sinister issues on an industry that has been embroiled in a legitimacy crisis practically since its inception and whose ethics has been repeatedly challenged.

Legitimacy is, indeed, a key word in the agri-biotech debate. By ‘legitimacy’ is here understood, following Suchman, “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions”.⁶ In the contemporary business environment, with its growing emphasis on the social responsibility of corporate actors, the ethical acceptability of a business is crucial. Clearly, if a business – or an industry – is believed to pose a risk to human health and the environment, or to infringe some fundamental laws of ethics (as tampering with nature may be perceived to do), its legitimacy is undermined.

Not surprisingly, the main effect of anti-GMO campaigns targeting specifically the ethics of agri-biotech has been to delegitimize the sector in general, and individual corporations in particular. Among these, Monsanto has been by far the most vilified, but by no means the only one whose reputation has suffered. In response to the activists’ de-legitimising strategies, agri-business corporations have stepped up efforts to build consensus around their practices. While the focus on improving science literacy as a way to combat scepticism and opposition has persisted, in time the range of strategies deployed in the service of corporate legitimation has become broader and more varied, with a growing emphasis on values, ethics, and beneficence. The communicative approach adopted has also changed, taking on a more clearly dialogic character. The websites of the main agri-biotech companies feature sections with names such as “Conversation” (Monsanto),⁷ “Transparency” (Bayer CropScience),⁸ “Consumer Hub” (Corteva)⁹ and often encourage the public to pose questions, including challenging ones, which the companies pledge to answer openly and transparently. These initiatives have the declared purpose of fostering a less antagonistic, more open relationship both with detractors and with those who do not have strong views on the topic but who are interested in understanding it better. I have argued elsewhere that this dialogic opening is still very much governed and managed by the companies, which continue to maintain a strong hold on the information that does get discussed and often manage to impose their framing on the discussion.¹⁰ However, it is undeniable

⁶ Mark C. Suchman, “Managing legitimacy: Strategic and institutional approaches”, *Academy of Management Review*, 20.3 (1995), 571–610, 574.

⁷ Monsanto.com.

⁸ Cropscience-transparency.bayer.com/.

⁹ Consumer-hub.corteva.com.

¹⁰ See Paola Catenaccio, “Web-mediated Stakeholder Communication in the Biotech Industry: the Discursive Construction of

that, on the surface at least, agri-biotech companies have been trying to reach and win over a larger audience, and that to do so they have been forced to address (and, as we shall see, occasionally circumvent) some of the key challenges and concerns which have been levelled at them.

2. Aim, Materials and Methodological Approach

This essay sets out to investigate the official websites of selected agri-biotech companies with a view to identifying the rhetorical and argumentative structuring of their strategies of self-legitimation. In particular, the study focuses on discursive constructions of corporate identity and/or industry ethos which address – implicitly or explicitly – key bioethical issues.

The analysis has been conducted on materials selected from the corporate website of four major players in the agri-biotech field: Monsanto (now part of Bayer CropScience, but endowed with an independent website);¹¹ Bayer CropScience;¹² Syngenta;¹³ and Corteva Agriscience.¹⁴ These four companies are among the major players in the agri-biotech market, which in turn has the lion's share of the world's agricultural production. All four corporations have official websites, and some of them also manage sister websites devoted to specific aspects of their business. The four main websites share the common characteristic of featuring a rather fragmented homepage displaying a multiplicity of pictorial elements accompanied by short lexias which open up an equally large number of navigating options. Along these paths, readers build at their leisure hypermodal traversals (to use Lemke's denomination)¹⁵ through which they construct meanings across multiple media, texts and modes.

This latter point is especially relevant for the purposes of this study. While all websites feature sections devoted to the description of the company (basically, 'Who we are' sections, though their names may vary), the construction of the companies' ethos and identities is not confined to them. Rather, it spreads across the various sections of the websites (with images and videos often playing an important supporting or even framing role), and is built incrementally (and often indirectly) as one reads on, with a sort of compound effect. Claims and arguments, therefore, are dispersed in the websites; their retrieval, and the reconstruction of the overarching argumentative strategy deployed in the service of self-legitimation, is an exercise in intertextual reading which requires extensive navigation guided by interlocking links.

Because of this, the materials upon which the analysis is based are of various natures and cover websites down to their second- and third-level pages, as deemed necessary. The excerpts analysed have been selected on the basis of their representativeness as judged by the analyst. As always in small-scale qualitative studies, there is a risk that examples are 'cherry-picked', thus increasing the chances of researcher bias. In order to offset this risk, the following criteria have been used in the selection of topics and materials:

Dialogic Illusion", *Altre Modernità*, Special Issue on "Language and Discourse in Social Media: New Challenges, New Approaches" (October 2018), 48-63. Available at riviste.unimi.it.

¹¹ Monsanto.com.

¹² Cropscience.bayer.com.

¹³ Syngenta.com.

¹⁴ Corteva.com.

¹⁵ See Jay Lemke, "Travels in Hypermodality", *Visual Communication*, 1.3 (2002), 299-325; "Multimedia Genres and Traversals", *Folia Linguistica*, 39.1-2 (2005), 45-56; "Multimodality, Identity and Time", in Carey Jewitt, ed., *The Routledge Handbook of Multimodal Analysis* (Abingdon: Routledge, 2009) 140-150.

- (1) Saliency: topics that are given visual salience in the websites (for instance because they occupy a central position in the homepage) are considered to rank higher in importance than more marginal topics. The more central the topic, the greater its relevance is assumed to be for the company.
- (2) Frequency and recursivity: the same topic (for instance, sustainability) may come up in different contexts, and multiple reading paths may have a page dedicated to sustainability as their end-point; when this occurs, it may be assumed that the topic is of special importance for the company;
- (3) Controversy-relatedness: the controversy around GMOs revolves around multiple issues, all of which are well known to the general public. As mentioned above, key concerns are related to human safety, environmental risk, long-term sustainability and social impact. The discursive self-legitimation of agri-biotech companies addresses all these issues, producing counterclaims which engage – either directly or indirectly – with the claims of GMO detractors, often providing extensive supporting evidence.

As for the methodological approach adopted, the analysis is conducted on two separate but interconnected levels. At a first level, the focus is on the identification of the legitimation strategies deployed in the websites. By ‘legitimation strategies’ I mean those discursive strategies which are deployed to construct entities as legitimate and therefore endowed with a ‘license to operate’, which they demonstrate “by responding to stakeholders in their local and global environment”.¹⁶ This step of the study is based on van Leeuwen’s framework for the analysis of legitimation discourse,¹⁷ which identifies four strategies typically deployed to legitimate an entity or a practice. The first part therefore discusses representative examples of such strategies retrieved from the agri-biotech websites. In the second part, attention is turned to an in-depth analysis of the way in which one of these legitimation strategies – rationalisation – is discursively constructed. Rationalisation has been selected as the focus of specific attention because of its salience as a framing device in the websites. For this step, the overarching theoretical framework is argumentation theory, both in its logico-dialectical and in its rhetorical dimensions. In adopting this perspective, I follow the tradition of Perelman and Olbrechts-Tyteca’s *nouvelle rhétorique*¹⁸ and other contemporary approaches to argumentation,¹⁹ including pragmadialectics (developed by van Eemeren and his associates),²⁰ and – a more recent development – the Argumentum Model of Topics by Rigotti and Greco,²¹ which aims to provide “a theoretical and

¹⁶ Anne Ellerup Nielsen, “License to Operate”, in Samuel O. Idowu et al., eds., *Encyclopedia of Corporate Social Responsibility* (Berlin/Heidelberg: Springer-Verlag, 2013), 1586.

¹⁷ Theo van Leeuwen, “Legitimation in Discourse and Communication”, *Discourse & Communication*, 1.1 (2007) 91-112.

¹⁸ Chaïm Perelman and Lucie Olbrechts-Tyteca, *The New Rhetoric: A Treatise in Argumentation*, trans. by John Wilkinson and Purcell Weaver (Notre Dame/London: University of Notre Dame Press, 1969).

¹⁹ For instance, Douglas Walton et al., *Argumentation Schemes* (Cambridge, Cambridge U.P., 2008).

²⁰ The pragmadialectic approach has been developed over the years in several volumes. For an overview, see Frans H. van Eemeren and Rob Grootendorst, *A Systematic Theory of Argumentation: The Pragma-dialectical Approach* (Cambridge: Cambridge U.P., 2004)

²¹ Eddo Rigotti and Sara Greco, *Topics: The Argument Generator: Argumentum eLearning Module*, 2006, www.argumentum.ch (restricted access); “Comparing the Argumentum Model of Topics to Other Contemporary Approaches to Argument Schemes: The Procedural and Material Components”, *Argumentation*, 24 (2010) 489-512; *Inference in*

methodological tool to analyze the inferential configuration of arguments, as supported by *loci*".²²

A fundamental aspect of both the New Rhetoric and pragmadialectics (in tune with classical approaches, including Aristotle's) is the importance attributed to rhetoric within a reasonableness-grounded approach to argumentation. In pragmadialectics, the notion of "strategic maneuvering"²³ – an eminently rhetorical concept – was introduced to account for the effort arguers make to simultaneously pursue the dual aim "of maintaining reasonableness and achieving effectiveness".²⁴ The importance of *both* reasonableness *and* effectiveness in argumentation suggests that the identification and logical reconstruction of argumentative patterns and schemes – which remains a key goal of argumentation studies – must be combined with an in-depth analysis of linguistic and rhetorical aspects if an argument is to be fully understood. A linguistic analysis of this kind is also suited to the retrieval of implicit premises and assumptions in argumentative discourse. Even the simplest of organisational identity claims such as the ones made in mission statements and similar organisational genres²⁵ can be part of a broader argumentative action organised around key themes strategically deployed in a manner designed to be maximally effective for legitimation purposes. A discursive operation of this kind is all the more essential in the case of such a controversial sector as agri-biotechnologies. The reconstruction of the argumentative patterns underlying such identity claims, of the standpoints they defend and assumptions they are based on, and of the strategic rhetorical choices used in their presentation, makes it possible to critically analyse the logical-inferential procedures, as well as the contextual and factual elements, which are at play in the persuasion strategies at work in the texts.

Based on the above, the second part of the investigation seeks therefore to identify recurrent argumentative patterns and salient rhetorical strategies routinely used in the service of self-legitimation, analysing them against the backdrop of current and past controversies on genetically modified crops with which they dialogically engage.

3. Strategies of Self-legitimation

This section is based on van Leeuwen's framework for the study of legitimation in discourse and communication.²⁶ According to van Leeuwen, legitimation answers the question "'Why' – 'Why should we do this?' and 'Why should we do this this way'".²⁷ All the excerpts analysed in this essay are designed to answer – more or less directly – precisely these questions. They therefore qualify as examples of legitimizing discourse, though the strategies they deploy may vary.

According to van Leeuwen, legitimation strategies fall within the following categories:

Argumentation A Topics-Based Approach to Argument Schemes (Cham, Switzerland: Springer Nature Switzerland AG, 2019).

²² Rigotti and Greco, *Inference in Argumentation*, vii.

²³ Frans H. van Eemeren, *Strategic Maneuvering in Argumentative Discourse: Extending the Pragmadialectical Theory of Argumentation* (Amsterdam/Philadelphia: John Benjamins, 2010).

²⁴ *Ibid.*, 40.

²⁵ Bing Ran and P. Robert Duimering, "Imaging the Organization: Language Use in Organizational Identity Claims", *Journal of Business and Technical Communication*, 21.2 (April 2007), 155-187.

²⁶ Van Leeuwen, "Legitimation".

²⁷ *Ibid.*, 93.

- (1) Authorisation, that is, legitimation by reference to the authority of tradition, custom and law, and of persons in whom institutional authority of some kind is vested.
- (2) Moral evaluation, that is, legitimation by (often very oblique) reference to value systems.
- (3) Rationalisation, that is, legitimation by reference to the goals and uses of institutionalized social action, and to the knowledge society has constructed to endow them with cognitive validity.
- (4) Mythopoesis, that is, legitimation conveyed through narratives whose outcomes reward legitimate actions and punish non-legitimate actions.

As van Leeuwen notes:

these forms of legitimation can occur separately or in combination. [...] They can occupy the best part of specific instances of text and talk which may hardly refer to what it is that is being legitimised, or they can be thinly sprinkled across detailed descriptive or prescriptive accounts of the practices and institutions they legitimize. And they are all realized by specific linguistic resources and configurations of linguistic resources.²⁸

In this section I will focus on each of the strategies independently, bearing in mind, however, that they seldom occur in isolation. Whenever more than one strategy appears to be deployed in a single text, the text will be discussed within the subsection of the strategy which appears to be salient.

3.1 *Authorisation*

The strategy of authorisation legitimates a given practice on the basis of some form of authority. Van Leeuwen distinguishes among several types of authority, based on custom (conformity or tradition), authority proper (personal or impersonal) and commendation (by an expert or a role model).

One of the ways in which agri-biotech companies respond to safety-related charges is by referring to regulatory frameworks, a strategy which falls within van Leeuwen's categorisation of "impersonal authority". In so doing, they invoke conformity with institutionalized procedures vested with intrinsic authority. Examples of this strategy can be found in all websites. The two excerpts quoted below are typical instantiations:

- (1) Before companies can make pesticides available to farmers, these crop protection tools, including herbicides, must undergo comprehensive evaluations by regulatory authorities. In the U.S., the Environmental Protection Agency (EPA) requires all pesticides to undergo more than 100 safety studies before they are approved.

Even after regulatory authorities approve a pesticide for use, they continue to consider new information to assess the safety of registered products. And no pesticide's regulatory approval is permanent. In the U.S., the EPA routinely reviews registered products to ensure they continue to meet safety standards.

As consumers ourselves, we fully support the comprehensive and science-based processes used by the EPA and other regulatory authorities around the world to ensure these crop protection tools can be used safely, according to label directions.²⁹

²⁸ Ibid., 92.

²⁹ Monsanto.com.

- (2) Crop protection is one of the most highly regulated industries in the world. Development of a new product involves many steps: discovery and formulation of the product; trials and field development; toxicology – the study of the effects of the compound; environmental impacts; and final registration.

To register a new product, we must show that it is safe for workers, for the environment, for the crops that are being protected, and for the food that is eventually eaten. Sophisticated risk assessments are undertaken and approximately 30% of the cost of a new active ingredient is spent on product safety.³⁰

By describing the regulatory process, highlighting its rigourousness and claiming their compliance, the companies pursue a double goal. On the one hand, they seek to reassure their stakeholders about the safety of their products; on the other, they attempt to construct and convey an ethical self by presenting themselves as willing participants in a process which requires time, energy and money. Both passages display lexical choices which emphasise rigour, accuracy and expertise. Evaluations are ‘comprehensive’, regulatory processes are ‘comprehensive and science-based’, crop protection is ‘one of the most highly regulated industries in the world’, and risk assessments are ‘sophisticated’. The main difference between the two texts is to be found in the way the two companies choose to call the products under discussion. Monsanto openly uses ‘pesticides’, though it reverts to the more neutral (and opaque) ‘crop protection tools’ in the closing line. Syngenta, on the other hand, never mentions pesticides, preferring the wording ‘crop protection’. Syngenta’s is a strategic choice long enacted by the agri-biotech business: all the terms used to refer to their products are consistently positive. This has led to accusations of opacity and deliberate obfuscation, which Monsanto, in its renewed commitment to transparency, probably is trying to offset by using the (normally dispreferred) word ‘pesticides’.

Another powerful source of authorisation is provided by science and scientists. The websites of all agri-biotech companies feature sections devoted to reporting the results of scientific studies. Often these studies have been undertaken by the companies themselves with the aim to counter accusations made by detractors. The excerpts below fulfil this task: in (3), Monsanto intervenes in the glyphosate debate citing scientific research as the ground for their continued use of the pesticide; in (4), Bayer CropScience reports on a study conducted to verify the impact of pesticides used on vines on the bee population:

- (3) Glyphosate is the active ingredient in Monsanto’s Roundup® branded agricultural herbicides. Glyphosate has a 40-year history of safe and effective use. In evaluations spanning those four decades, the overwhelming conclusion of experts worldwide, including the Environmental Protection Agency (EPA), has been that glyphosate can be used safely.³¹

- (4) The researchers of Ceapimayor carried out the field studies in Chile from September 2014 to February 2015 to find out which and how many pollinators were present in the grape farms and vineyards during the flowering period.... ‘There are virtually no pollinators in the plantations’, summarizes Alan Lürer. He is responsible for Public & Government Affairs and Stewardship at Bayer and Head of the Bayer Bee Care team in the Chilean Cono Sur region. ‘We found a significantly higher number of them outside of the vineyards, and in greater variety, too’. Knowing that bees and other pollinators do not find grape flowers particularly attractive when the grape plantations are surrounded by sufficient, alternative pollen-rich

³⁰ Syngenta.com.

³¹ Monsanto.com.

flowers and forests, the experts conclude that if Chilean farmers have the right conditions in their fields, they can, for example, use crop protection products on their grapevines even during the flowering period without much risk of exposing bees.³²

In both passages, the authority for the safety claims resides with ‘experts’. The texts from which the excerpts are taken can be seen as examples of *argumenta ab auctoritate* (even though the description of the experiment embedded in (4) is such that the role of the expert is ancillary, rather than central) which are, however, not entirely well formed. In particular, in (3), the ‘experts’ referred to are not univocally identified (even though the mention of EPA provides some additional credentials); and in (4) the expert is an affiliate of the company, which is sufficient ground – for detractors at least – to challenge his authority. At any rate, neither company seems to be concerned about the possibility of a challenge, and references to the authority of scientists or, more generally, of science, are frequent in the websites.

‘Tradition’ is another legitimating strategy identified by Van Leeuwen. In the discourse produced by businesses which have scientific and technological innovation at their core, references to tradition as a form of authorisation may be expected to be hardly salient, or indeed applicable. However, appeals to tradition are common in explanations and justifications of genetic engineering techniques, as the example below shows:

(5) For clarification, the acronyms GM and GE (genetic engineering) are frequently used interchangeably, although they are slightly different in meaning. GM refers to a range of methods such as selection, hybridization and induced mutation that are used to alter the genetic composition of domesticated plants and animals. GE is one type of GM that involves the intentional introduction of a targeted change in a plant, animal or microbial gene sequence to achieve a specific result. In other words, GE is an extension of GM.

As you can see from the years of research, genetically modifying a plant is nothing new. Humans have been doing it for more than 10,000 years, for good reasons.³³

(6) Humans have been using plant breeding techniques to improve our food and crops for thousands of years. Farmers and scientists have been using traditional plant breeding to create plants that have beneficial characteristics, like drought tolerance. In the 1980s, scientists began using biotechnology, a method of transferring genes directly into a plant without the long process of trial and error. These products are called genetically modified organisms, or GMOs.³⁴

In these passages – which are two of many, evenly distributed across all websites – the ultra-innovative techniques involved in genetic engineering are presented as tools which make traditional practices easier and more effective, but which do not differ in nature from time-honoured and universally accepted methods in agriculture. The persuasive tactic enacted involves minimising the distance between conventional and ‘enhanced’ or ‘improved’ agriculture, as agricultural practices based on genetic engineering are often referred to. Both participles are typically used in nominal

³² Cropscience.bayer.com.

³³ Corteva.com.

³⁴ Monsanto.com.

constructions where they function as classifying, rather than qualifying premodifiers,³⁵ thus effectively becoming terminological units which univocally identify a given class of objects. Significantly, both lemmas encode the presupposition that that new agricultural practices and products are essentially the same as traditional ones, the difference between them being only a matter of degree, not of essence. A seed that undergoes a procedure that ‘improves’ it is still the same seed, but better.

Yet another source of authority are what van Leeuwen calls ‘role models’. Biotech companies consistently seek – and quote – the endorsement of farmers. Excerpt (7) exemplifies this strategy, which is widespread across the websites of all companies:

(7) “Technology has played a huge part in our ability to expand production”

“We’ve seen over the last five years a significant leap in all field yield levels, and I think that’s going to be the number-one contributor to us being able to continue to grow in our ability to expand and continue to thrive.”

-Farmer³⁶

To sum up, the most common examples of authorisation are references to regulatory frameworks, references to the authority of scientists (or more generally of science), and references to commendations by users, predominantly farmers. These three legitimisation strategies are each valid individually, but they are even more effective when taken jointly, as they address different salient concerns in the GMO debate. References to regulatory bodies address safety concerns, as do references to the essentially identical nature of GMOs and traditional products. The authority of science and scientists is invoked both to claim safety and to display efficiency. Finally, farmers and other expert figures are enlisted to vouchsafe for the effectiveness of agri-biotech products.

3.2 Moral evaluation and rationalisation

In this section I discuss moral evaluation and rationalisation. The two strategies share a common grounding in ethics and morality, though they differ in the way in which they make reference to these values. In moral evaluation, values are mentioned explicitly. For instance, a company may say of itself that it strives to be a good corporate citizen, making an explicit moral statement which does not need to be qualified any further. A company can also refrain from making such an explicit claim, and say that it aims to improve people’s lives by providing them with its products. This is an instance of rationalisation: moral values are not stated explicitly, but they are implied as the result of a reasoning process which ultimately attributes moral qualities to the company even though it does not so explicitly. Van Leeuwen observes that “in contemporary discourse, moralisation and rationalisation keep each other at arm’s length. In the case of moral evaluation, rationality has gone underground.... In the case of rationalisation, morality remains oblique and submerged even though no rationalisation can function as legitimisation without it”.³⁷ In the case of agri-biotechnologies, moralisation and rationalisation are key strategies in the discursive construction of legitimacy. These two strategies are especially relevant for the purpose of this study because, by their very nature, they are bound to evoke

³⁵ See Michael A.K. Halliday et al., *An Introduction to Functional Grammar* (London: Routledge, 2013), 39.

³⁶ Corteva.com.

³⁷ Van Leeuwen, “Legitimation”, 100.

ethical issues. I will consider rationalisation first, and then move from rationalisation to moralisation. It is my contention that rationalisation is used by the agri-biotech business as an overarching framework for the introduction of moralisation as a viable legitimating strategy.

(8) Innovation has never been more important

Food is the most basic human need and the engine of economic development. Yet while our world is growing, our food resources are not. As a champion of responsible agriculture, this is our challenge. Our response to the challenge is innovation.³⁸

(9) Every day, our planet wakes with nearly 200,000 more mouths to feed and more farmland lost to erosion. Many people who produce the world's food are living in poverty, while biodiversity is disappearing fast. We have a plan to meet these challenges: The Good Growth Plan.

Its mission is to improve the sustainability of agriculture and our business through six commitments to be achieved by 2020.³⁹

(10) Monsanto is an agricultural company, helping farmers large and small grow food more sustainably. From seed to software, to fiber and fuel, we're developing tools to help growers protect natural resources while providing nourishment to the world. In the face of a changing climate and other environmental challenges, we're helping ensure our agricultural system continues to suit the needs of everyone.⁴⁰

(11) Ten billion people require a solution

The world's population increases by three people every second. This seems like a manageable number, but in 2050, when this second's three newborns are adults, the inconceivable number of 9.7 billion people will inhabit the Earth – about one third more than today.

The question is, how will it be feasible to feed these almost ten billion people when it is already impossible to meet the current basic needs of the world's population?

Bayer's answer is sustainable agriculture.⁴¹

All four excerpts are built around a problem-solution pattern, where the problem has strong moral undertones, and the solution is provided by the company. In the face of 'challenges' (explicitly mentioned in three out of four excerpts) that threaten the contemporary world (be they a growing population, dwindling resources, or climate change), all companies offer a 'solution' or a way to 'meet the challenge'. All passages are remarkably similar in their deployment of rationalising strategies which provide the companies with legitimisation by highlighting the moral implications of their businesses. They can therefore be seen as examples of 'instrumental rationality', i.e. of rationality that "legitimizes practices by reference to their goals, uses and effects".⁴²

Three aspects are worth noticing in these forms of legitimisation. First, ethics is never explicitly mentioned. This is typical of rationalisation, as van Leeuwen remarks (see above), and suggests that moral/ethical values do not need to be explicitly mentioned as they are part of the shared common ground. Second, ethicality is predicated on the 'goals' or 'outcomes' of agri-biotechnology – not,

³⁸ Corteva.com.

³⁹ Syngenta.com.

⁴⁰ Monsanto.com.

⁴¹ Cropscience.bayer.com.

⁴² Van Leeuwen, "Legitimation", 101.

technically speaking, of agri-biotechnology in itself. This means that the dimension of ethics considered is that of ‘extrinsic ethics’, i.e. a dimension that concerns “ethical issues that ... are *external* to scientific practice”.⁴³ Intrinsic ethics – “issues [that] arise when values and ethical assumptions are embedded within scientific findings and analytical methods”⁴⁴ – does not seem to be contemplated. This approach, while obviously suited to the purpose of advancing the case for agri-biotechnologies, leaves out an entire array of issues related to the moral acceptability of genetic manipulation, which is an issue often raised in other fields of genetic engineering, but consistently underplayed in agri-biotech discourse. Thirdly, the ethicality of the outcomes is used to make moral claims about the companies. This strategy shifts the attention from corporate practices (which are the most common target of anti-agribusiness criticism) to the end results of the implementation of agri-biotechnologies. In terms of rhetorical strategies, we see here at play an instance of what in Appraisal Theory is called ‘invoked appraisal’:

With invoked appraisal, we are told something about an entity or state which is intended to elicit a particular kind of evaluative reaction, without any of the lexical items being identifiable as unambiguously evaluative.⁴⁵

Using a generalised statement as an example, we can reconstruct the process of elicitation of positive appraisal as follows:

Company A produces seeds and tools that are instrumental in ensuring that food security is achieved in the future.

The shared common ground here is that food security is a desirable goal. Its desirability is grounded in values that are generally acknowledged to belong to the realm of ethics – “the right thing to do”.⁴⁶ The invoked appraisal is that Company A must be evaluated positively because of its role in the process described, with the positive evaluation being linked to the ethical values invoked. This

⁴³ Erich W. Schienke et al., “Intrinsic Ethics Regarding Integrated Assessment Models for Climate Management”, *Science and Engineering Ethics*, 17.3 (2011), 503-23, 505.

⁴⁴ *Ibid.*, 503. Schienke et al. distinguish between procedural, extrinsic and intrinsic ethics as follows:

“(1) *Procedural ethics*: ethical aspects of the process of conducting scientific research and disseminating results, such as: falsification, fabrication, and plagiarism; care for subjects (human and non-human animal); responsible authorship issues; analysis and care for data; and conflicts of interests.....

(2) *Extrinsic ethics*: ethical issues extrinsic to the production of scientific research, i.e. ethical issues that involve issues that are external to scientific practice. These arise, for example, when considering the impact of scientific research on society. The above include: the impact of funding on research trajectories, the effects of technological innovations on social ends such as health and wellbeing, and the role of science in policy making.

(3) *Intrinsic ethics*: ethical issues and values that are embedded in or otherwise internal to the production of scientific research and analysis. These involve, ethical issues arising from, for example: the choice of certain equations, constants, and variables; analysis of data; handling of error, and degree of confidence in projections” (*ibid.*, 505-506).

⁴⁵ Geoff Thompson and Laura Alba-Juez, *Evaluation in Context* (Amsterdam, Philadelphia: John Benjamins, 2014).

⁴⁶ I am here using the word ‘ethics’ in a very broad sense to indicate the area of human inquiry that aims to identify whether a given behaviour or action is right or wrong, thereby establishing socially determined rules that allow or sanction such behaviour or action. This use is widespread, as testified by the recurrence of the term in a variety of settings (ethics committee, ethical clearance, code of ethics etc.). Ethics, however, is sometimes distinguished from morality on a variety of grounds. This is not the place for a full discussion of the topic; suffice it say that in the business world ethical behaviour is typically associated both with aspects of conduct and with more general issues of accountability in moral terms.

evaluative process can be reconstructed with greater precision by analysing its argumentative structure. A proposal for such a reconstruction will be put forth in Section 4 below, where the various components of the argument will be discussed in detail. Suffice here to say that the rationalising strategies deployed in the websites of the four agri-biotech giants analysed, while not mentioning ethical issues explicitly, consistently evoke issues belonging to the field of ethics with a view to eliciting an evaluation of themselves and their business as ethical.

Alongside these rationalising strategies, the websites also feature morality as legitimation, though they do so to a much lesser extent, and confine morality claims to dedicated sections. Recourse to morality as a qualifying feature of an entity is common in today's business world.⁴⁷ As mentioned earlier in this essay (Section 1), reference to values has become particularly widespread since the rise around the turn of the millennium of the Corporate Social Responsibility paradigm, and there are virtually no companies nowadays which do not make some form of explicit reference to ethics and morality in their identity claims (typically in their mission statements). Agri-biotech companies are no exception, and make regular references to abstract values such as integrity, respect and transparency:

(12) Integrity, respect, and transparency are core values, and acting as good corporate citizens in each country where we operate is at the foundation of our work.⁴⁸

(13) We always do what's right, maintaining high ethical standards and conducting business safely and transparently.⁴⁹

Ethics is clearly a key point in these two excerpts, and refers to procedural aspects having to do with business conduct (Monsanto states that it always *acts* as a good corporate citizen; Corteva insists that that they always *do* what's right). In both cases, the wording is fairly standard, and may equally apply to a different type of business. They do, however, recover a dimension of individual accountability in business conduct which was overlooked in the rationalisation strategies described above.

Discursive constructions that mention the company's core business may also be clearly value-based, with implicit or explicit ethical undertones. This is the case with excerpts (14) and (15) below:

(14) We are a business that helps humanity face its toughest challenge: how to feed a rising population, sustainably.⁵⁰

(15) Bayer ForwardFarms are sustainable agriculture in practice.⁵¹

The ethical dimension in these passages is primarily conveyed by references to sustainability, which implies social and environmental awareness and a focus on the wellbeing of future generations – as well as being an obvious buzzword in today's business environment. Note that in (14)

⁴⁷ Archie B. Carroll, "The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders", *Business Horizons*, 34 (1991) 39-48.

⁴⁸ Monsanto.com.

⁴⁹ Corteva.com.

⁵⁰ Syngenta.com.

⁵¹ Cropscience.bayer.com.

moralisation is added on to rationalisation, which is deployed in the first part of the quote.

Recourse to sustainability as a marker of ethicality is widespread in contemporary business discourse, especially in agri-business. In fact, despite its ubiquity, ‘sustainability’ is in many ways a contentious concept. Risen to popularity since the issuing of the Bruntland Report in 1987, which defined ‘sustainable development’ as a form of development that “seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future”,⁵² the term has gained momentum in the last twenty years. Its meaning, however, remains to this day largely unstable. ‘Sustainability’ has come to be used in business and policy discourse as a typical floating or empty signifier, i.e. a signifier which can take upon itself multiple (and often mutually contradictory) meanings. It is unquestionable that the notion of sustainability evokes eminently ethical values: claiming to be ‘sustainable’ is to all effects and purposes akin to claiming to be ethical. The use of the lemmas ‘sustainable’, ‘sustainability’ and ‘sustainable’ is therefore a way of making ethical claims, as well as of reinforcing the ethical implications of the rationalising strategies enacted in other parts of the texts. Because of the contested meaning of sustainability, however, moralising strategies relying purely on sustainability claims are more easily challengeable than those grounded in rationalisation, where the logical procedural component can be more effective in commanding at least temporary alignment.

3.3 *Mythopoesis*

The last legitimisation strategy identified by van Leeuwen is mythopoesis, which consists in legitimisation through storytelling. This is extremely popular in the websites analysed, and is predominantly constituted by success stories involving the use of agri-biotechnology. Some of these success stories can also fit in the category of legitimisation by authorisation, where the source of the authority is a role model (usually a technology savvy farmer). Often, however, endorsements of agri-biotechnologies are embedded in highly personal narratives, blogs and other forms of storytelling where scientific and technical explanations combine with a highly emotional presentational style. Excerpt (16) below is the final part of a story published on Syngenta’s website. It reports on the beneficial effects experienced by a Dutch potato grower following his participation in Bayer’s Forward Farming program, which enabled him to experiment with new products aimed at reducing the environmental impact of his business. Incidentally, the program includes also a focus on bee health, with the introduction of bee-hives on the farm. The final part of the story reads as follows:

- (16) Before Roubos’ working day ends, he cleans his tractor and machines. While doing this, he also has the environment in mind. Whenever Roubos fills or cleans his spraying equipment on the farm, he uses Phytobac, a simple but highly effective spray-residue management system. It prevents residues from getting into sewage systems or nearby bodies of water.

As Roubos parks his clean tractor, the evening sun sets on Het Groene Hart. It’s time for him to have dinner with his wife, Eveline and their two small children Sam and Jenna. Thinking about his family, Roubos feels a big responsibility: “I’m a sixth-generation farmer, and I want the farm to exist at least for another six generations. So it’s my job to farm sustainably in order to ensure the soil and water quality for

⁵² Bruntland Commission, *Report of the World Commission on Environment and Development: Our Common Future*, Transmitted to the General Assembly as an Annex to document A/42/427, Development and International Cooperation: Environment (1987), 41.

the next generations”.

By using Syngenta’s product to clean his tractor, Roubos shows environmental awareness and responsibility, and can therefore look at the future of his family and of his business with well-deserved satisfaction and optimism.

4. Arguing the Ethical Self

In Section 3 I have discussed the legitimization strategies most commonly used in the agri-biotech business and outlined some of the most salient linguistic strategies deployed in their service. In this section, I will provide an argumentation-based account of key examples of rationalisation, which I consider the dominant, overarching strategy setting the tone for the construction of agri-biotech companies as legitimate, and especially ethical, entities.

I have stressed above, following Van Leeuwen, that rationalisation requires some form of moral reference in order to function as legitimization. I have also shown that one of the ways in which rationalisation strategies operate is by evoking ethically-grounded positive evaluations which do not technically pertain to the intrinsic nature of the companies to be legitimated, but which such companies can nonetheless claim by virtue of their instrumental role in pursuing ethical goals.

The methodological framework for this part of the analysis is pragmadialectics, which is combined with the Argumentum Model of Topics and other approaches to argumentation in order to better account for key implicit aspects of the argumentation deployed.

To illustrate my point, I will refer to an extract from excerpt (10), which was briefly analysed in Section 3.2 above.

(17) We’re developing tools to help growers protect natural resources while providing nourishment to the world.

Recall that, as discussed in Section 3.2, in other examples of legitimization strategies, explicit mention is made of ‘challenges’ or ‘problems’ – namely, how to feed a growing population, how to preserve natural resources and how to do both things at the same time. In these examples, agri-biotech companies are depicted as entities that play a role in solving the problems or addressing the challenges described (how to feed a growing population without depleting the earth’s natural resources). Positive evaluation then ensues.

The problem-solution pattern which constitutes the backbone of the above claim is typically found in instances of what in pragmadialectics goes under the name of “pragmatic argumentation”. Pragmatic argumentation is a form of causal argumentation characteristically used to recommend a certain course of action and typically has the following structure:

Standpoint: Action X should be carried out

1.1 Because: Action X leads to positive result Y

(1.1’) (And: If action X leads to a positive result such as Y it must be carried out)

A version of this scheme that highlights the problem-solution structure is the one below (adapted from Garssen)⁵³

Standpoint: Product/approach X should be adopted

1.1 Because: Adoption of product/approach X solves problem Y

(1.1') (And: If product/approach X solves problem Y, it must be adopted)

where (1.1') represents a tacit assumption which all participants in the argumentative debate share. As Garssen observes:

In pragmatic problem-solving argumentation the positive result is that a specific problem is solved. In this type of argumentation it is clear from the outset that there is a problem and that the removal of the problem is a positive thing. The speaker does not need to convince the listener that this problem exists and that the problem needs to be solved. These are in other words presuppositions that do not need any further argumentation.⁵⁴

In the case at hand (excerpt 17 above) the only part of the argument which is explicitly encoded in the text is 1.1:

1.1 By adopting Monsanto's products and solutions, natural resources can be preserved and food security achieved.

The tacit assumption that a solution to the joint problems of resource depletion and persisting and likely increasing food insecurity is desirable is, of course, something nobody would challenge.

The other tacit component in this argumentative scheme is the standpoint. In pragmatic argumentation, the standpoint is typically a recommendation ('Action X should be carried out'; 'Product/approach X should be adopted'). But is this the case here?

Of course, to an extent it is: agri-biotech companies do try to make the case for genetically modified crops as a solution to the world's most pressing problems. In so far as the process of legitimation involves the industry as a whole, rather than the specific companies, they are indeed promoting agri-biotechnologies in principle. But they are also, first and foremost, promoting themselves. They are making identity claims. In other words, they are saying that they are legitimate – ethical – companies.

I have suggested above (Section 3.2) that the companies' self-ascribed ethicality is the result of invoked appraisal, i.e. a form of quality attribution which is not explicitly encoded in the language, but rather understood by the reader/interlocutor on the basis of standard inferential procedures relying on commonly shared assumptions. I will try here to provide an account of the multiple inferential procedures whereby the ethical nature of agri-biotech corporations is argued. To do so, I will reconstruct the combination of interlocking arguments which warrants the conclusion that agri-biotech companies want readers to infer.

⁵³ Bart Garssen, "The role of pragmatic problem-solving argumentation in plenary debate in the European Parliament", in Frans H. van Eemeren, ed., *Prototypical Argumentative Patterns: Exploring the Relationship Between Argumentative Discourse and Institutional Context* (Amsterdam, Philadelphia: John Benjamins, 2017), 31-52, 35.

⁵⁴ *Ibid.*, 35.

This reconstruction is based on the Argumentum Model of Topics (AMT) proposed by Rigotti and Greco,⁵⁵ supplemented with references to classical argumentation schemes.⁵⁶ The AMT model, which builds on pragmadialectics as well as on the classical tradition or argumentation studies, revolves around the notion of *loci*, or *topoi*, i.e. “abstract structures that generate or support (depending on the theory involved) a variety of arguments in real-life argumentation”⁵⁷. They are, in practice, argument schemes which provide the inferential backbone upon which real-life arguments are built. One such locus is the locus from cause to effect, which establishes a relationship between a phenomenon and its cause, or between a phenomenon and its consequences. Each locus generates ‘maxims’, which are “inferential rules (often, though not always, formulated with an ‘if... then’ form)”⁵⁸ that work “as a major premise of syllogistic reasoning that is part of the inferential configuration of an argument supporting the intended standpoint”.⁵⁹ For instance, a maxim derived from the locus from cause to effect may be the following:

If an instrument reduces the cause of a problem that affects mankind [CAUSE], then that instrument helps save mankind [EFFECT].

Loci and ‘maxims’ represent the procedural-inferential aspect of argumentation – its purely logical, abstract component. Besides this, the AMT “includes a material-contextual component ..., which instantiates or anchors the locus and maxim in a specific context”. The specific context includes a ‘datum’, i.e. the factual starting point for the argumentation, as well as an ‘endoxa’, i.e. a set of beliefs which work as underlying assumptions in any type of reasoning. Note that the ‘endoxa’ needs not be true: it just needs to be part of the interlocutors’ taken-for-granted knowledge in a given argumentative discussion. The procedural-inferential component and the material contextual component are interconnected syllogistic structures that, together, “justify how the inferential configuration of arguments is established and how a standpoint is justified based on an inferential rule derived from the locus, as well as on premises that are part of the culture of the interlocutors, their context, and how they interpret it”.⁶⁰

Below is a reconstruction of the above-cited argument that agri-biotech businesses are ethical because they help solve one of mankind’s biggest problem, i.e. food security. This complex argument can be split in two separate, simple arguments, followed by a third one which warrants the final claim. The first argument has as its conclusion (or standpoint, in pragmadialectic terms) in the fact that agri-biotechnologies are beneficial to mankind. The second one starts from this point, which it takes as a datum, and projects the beneficence of the product (biotechnologies) onto the producer (agri-biotech companies). Finally, a third argumentative step equates the company’s beneficence with ethicality.

A schematic representation of the first argument is provided below:

⁵⁵ Rigotti and Greco, *Inference*, xii.

⁵⁶ In particular, I rely on Douglas Walton et al., *Argumentation Schemes*.

⁵⁷ Rigotti and Greco, *Inference*, xii.

⁵⁸ *Ibid.*, xiii.

⁵⁹ *Ibid.*, xii.

⁶⁰ *Ibid.*, xiii-xiv.

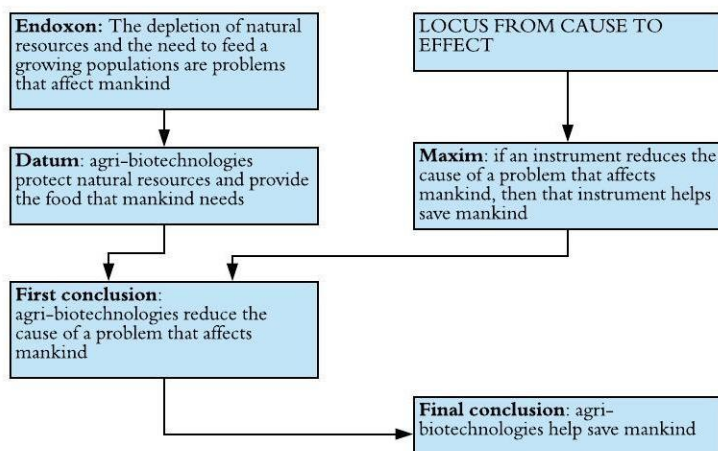


Fig. 1: AMT reconstruction of the argument supporting the standpoint that agri-biotechnologies help save mankind

In this first argument, the underlying assumption (the endoxa) is that while the world's need for food is growing, natural resources are getting depleted. This is a problem that threatens the survival of mankind, and is posited as an undisputed fact. The datum, which the companies insist on, is that agri-biotechnologies can provide enough food to feed the world while conserving resources. Relying on the locus from cause to effect, and based on the maxim that if an instrument reduces or solves a problem that affects mankind, then that instrument helps save mankind, it can be inferred that since provision of sufficient food combined with the preservation of natural resources (cause) will result in a reduction of the problem of increasing food needs and resource depletion (effect), then it can be stated that agri-biotechnologies can help save mankind.

The second argument builds on the conclusion that agri-biotechnologies help save mankind to build the case for the claim that the companies that produce them are, in a sense, mankind's saviours. I have stated earlier in this essay that the ethicality of agri-biotech companies is rarely explicitly stated, rather being typically simply invoked (i.e. it is the reader that must infer – based on the acceptance of the fact that biotechnologies are a fundamental step towards a future in which everybody has enough food and the environment is not depleted – that the companies which produce them are ethical by definition). This inferential procedure has its source in the locus from efficient cause followed by the application of an analogical scheme. One of the maxims that is typically derived from this locus from efficient cause states that if a given entity (for instance, a company) has a certain quality, then its products will have the same quality. So, if a given company is good, its products will be good. This maxim can also be reversed: if a given product is good, then the company that produces it must also be good. A version of this latter maxim is at the basis of the argument scheme supporting the standpoint that agri-biotech companies help save mankind. The datum – i.e. the contextual starting point – upon which the material-contextual component of the argumentation hinges is the claim that agri-biotechnologies – which are produced by agri-biotech companies – possess the quality of being able to help save mankind. By applying the maxim that if a product has a certain quality, then the producer

must have the same quality, it is possible to transfer the quality of “helping save mankind” from agri-biotechnologies to agri-biotech businesses. Figure 2 below illustrates the combination of the inferential schemes at play in the two interlocked arguments described so far (argument 1 has a grey background, and argument 2 a white one):

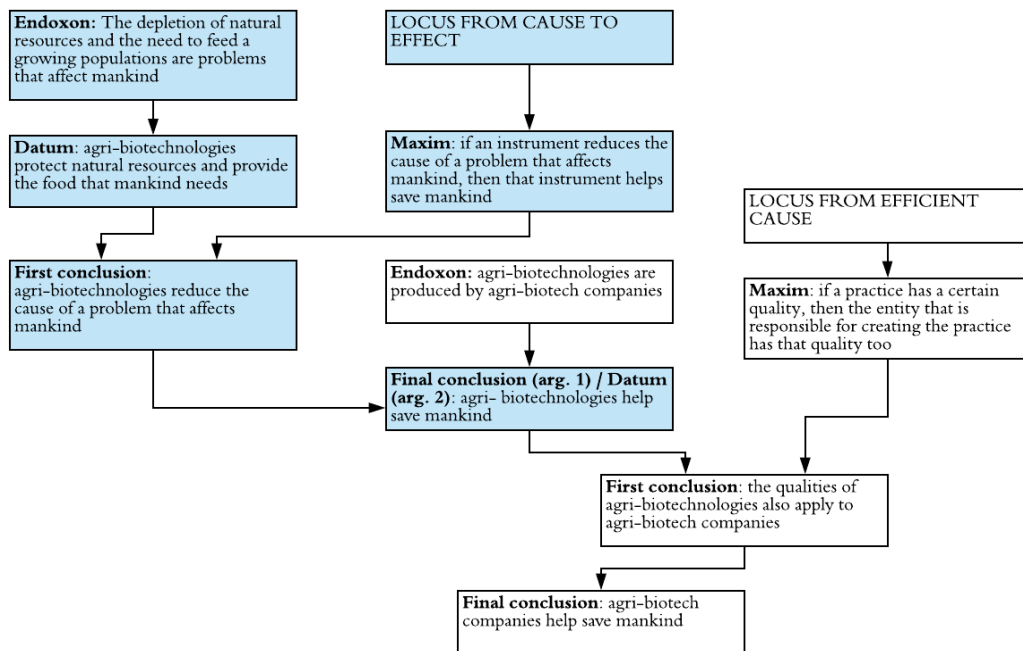


Figure 2: AMT reconstruction and combination of the two interlocked arguments supporting the standpoint that agro-biotech companies help save mankind

At this point, the inference that agri-biotech companies are ethical is only one step away. This final standpoint (which remains tacit) can be reached by means of the application of what Walton et al., based on Perelman and Olbrechts-Tyteca,⁶¹ refer to as “Argumentation from Interaction of Act and Person”, and which can be represented as follows:

- Premise 1:* Person P has done acts A
- Premise 2:* To acts 2 is attributed value V
- Conclusion:* Person P is V

If we replace ‘Person P’ with ‘agri-biotech company X’, ‘acts A’ with ‘help save mankind’ and ‘value V’ with ‘ethical’, we obtain (with a few adjustments) the following:

- Premise 1:* Agri-biotech company X helps save mankind
- Premise 2:* To helping save mankind is attributed the value of being ethical

⁶¹ Perelman and Olbrechts-Tyteca, *The New Rhetoric*, 296-305.

Conclusion: Agri-biotech company X is ethical.

As the discussion above shows, the configurations of the interlocking arguments leading to the conclusion that agri-biotech companies wish us to draw are structurally complex and demand the activation of multiple inferential procedures grounded in a variety of loci and based on different maxims. Only a minimal part of the argument is explicit. Often only the datum is stated – in the case at hand, ‘We’re developing tools to help growers protect natural resources while providing nourishment to the world’. Yet the argumentative resources deployed in the service of self-legitimation are massive, sophisticated, and rely on powerful “objects of agreement”⁶² (such as, for instance, the need to find a way to ensure food security without destroying the environment) which facilitate their unquestioned acceptance.

One final word must be devoted to the rhetorical organisation of the arguments and to the way in which such organisation contributes to advancing them. To this purpose, consider again the wording of the complex argument whose structure has been outlined above:

(17a) We’re developing tools to help growers protect natural resources while providing nourishment to the world.⁶³

The sentence is only apparently a description of Monsanto’s business, although it starts off as such (‘We’re *developing* tools’), with the company presented as the Actor in a proposition which hinges on a verb of material process typically used in the description of the activities of companies whose core business involves research as well as manufacturing. The passage is characterised by a complex structure characterised by multiple subjects-agents (‘*we* are developing *tools* that help *growers* protect...’). The structure discursively creates a set of interlocked responsibilities and benefits, with Monsanto investing farmers with agency but retaining the credit for the outcome (it is Monsanto that creates the conditions for effective environmental stewardship). It also exploits the principle of end-focus, which states that “it is common to process information in a message so as to achieve a linear presentation from low to high information value”,⁶⁴ in order to encourage readers to focus their attention on the last part of the sentence. This also has the effect of enhancing what Perelman and Olbrechts-Tyteca call the “presence” of this part, by displaying “elements on which the speaker wishes to center attention in order that they may occupy the foreground of the hearer’s consciousness”.⁶⁵

The focal point of the entire passage – the one to which the greatest salience is given, and which therefore has the most prominent ‘presence’ – revolves around two joint dependant clauses: a) ‘protect natural resources’; and b) ‘provid[e] nourishment to the world’. These are, as mentioned above, strong objects of agreement: that the world population is growing exponentially is commonly accepted, and that people need food is also undisputable. Equally commonplace is that the earth’s resources are getting depleted by the day, and that no solution for this seems to be readily available at the moment. The connector used to conjoin the two dependant clauses is ‘while’, which indicates simultaneity, but also cues a form of concession, i.e. it indicates an “assessment of contrast and unexpected relation

⁶² Ibidem, 67 ff.

⁶³ Monsanto.com.

⁶⁴ Randolph Quirk’ et al., *A Comprehensive Grammar of the English Language* (London: Longman, 1985), 1357.

⁶⁵ Perelman and Olbrechts-Tyteca, *The New Rhetoric*, 142.

between propositions”.⁶⁶ This contrast is due to the fact that the commonly assumed relationship between the two propositions is one of negative causality: one would expect that increasing agricultural production to achieve food security demands that natural resources be exploited to the full, thereby leading to their further depletion.⁶⁷ By converse, maintaining natural resources intact is often assumed to be an obstacle to the improvement of the agricultural productivity which would be needed in order to achieve food security. That both resource protection and food security can be simultaneously achieved goes counter commonly held beliefs, and since both goals are highly desirable, as well as ethical by definition, their concurrent attainment carries a strongly positive evaluation, with the unexpectedness of the result acting as a powerful booster.

By choosing strong objects of agreement and presenting them in a way which makes them cognitively prominent in the readers’ minds, the company strategically manoeuvres readers to align themselves with its position and follow through with its line of reasoning to the desired conclusion. Moreover, recourse to a syntactic structuring which emphasises the extraordinary power of agri-biotechnologies to not only solve mankind’s problems, but also do so in a way that benefits, rather than exploits, the environment, strengthens the persuasive power of the argument and adds an additional boost to the corporate ethos of the companies involved. However, a demonstration of the way in which such extraordinary feat is achieved is not provided in the immediate proximity of the claim. While such demonstrations do appear in other sections of the website, they are not contiguous to the main claim and are, therefore, not as effective in supporting it, leading to an overall weakening of the argumentation. This is a common problem in hypertextual argumentation,⁶⁸ and one that is likely to be exacerbated by the need to select a primary line of defence when the attacks are on many fronts – as is the case with agri-biotechnologies.

5. Conclusions

In this paper I have discussed the legitimisation strategies deployed by agri-biotech businesses in their websites. By means of a qualitative analysis of the materials retrieved from them, I have shown that through recourse to the legitimisation strategy of authorisation agri-biotech companies discursively construct for themselves an ethos as reliable companies: references to rules and regulation, scientific procedures, traditions, and testimonies by parties invested with authority help convey an idea of efficiency and expertise. These strategies are extensively exploited, and are further supported by mythopoiesis. However, they are ancillary to the main identity claim that all companies make, which is that they are ethical entities with an eminently ethical mission.

The ethical nature of biotech companies is constructed by means of rationalising strategies. These strategies are built around factual data (for instance, “the world population is growing exponentially and current agricultural production cannot keep up with it” and “biotechnologies improve agricultural

⁶⁶ Mika Shindo, *Semantic Extension, Subjectification, and Verbalization* (Lanham, Maryland: The University Press of America, 2009), 92.

⁶⁷ A further implicit assumption is that industrial methods of agricultural production (of which agri-biotechnologies are prime examples) are especially prone to depleting natural resources.

⁶⁸ See Chiara Degano, “Argumentative Genres on the Web. The Case of two NGO Campaigns”, in Sandra Campagna et al., eds., *Evolving Genres in Web-mediated Communication* (Bern: Peter Lang, 2012), 97-124.

yield”) which trigger complex inferential processes ultimately leading to the attribution of positive qualities – first and foremost ethicality – to the companies involved.

I have also suggested that the kind of ethics implicitly referred to or inferentially evoked in the website texts is almost invariably ‘extrinsic’ ethics. Arguments in favour of biotechnologies are based on their presumed beneficence for mankind and the environment: they produce desirable, ethically valid results, hence they are worth supporting. By the same token, the inference of the ethicality of the companies is based on the (supposedly) demonstrated ethical nature of the technologies they develop.

As the analysis of one of such overarching arguments has shown, much of this argumentative work lies hidden behind the surface of the texts analysed. Premises, assumptions, and even conclusions are often left implicit and buried deep down in the argumentative configuration of the texts. This makes it more difficult, for potential opponents, to ask the critical questions which may be asked in a standard critical discussion. For instance, the pragmatic argumentation that agri-biotechnologies should be embraced because they make it possible to increase agricultural production may well be challenged by asking whether there might not be better means to achieve the same desired effect. In fact, the very existence of competing paradigms of agricultural productions (such as agro-ecology) claiming to be able to achieve exactly the same aim suggests that this critical question is indeed topical.

Reconstructing the argumentative configuration of the self-legitimizing discourse of contested companies makes it possible to identify with greater clarity the assumptions underpinning it, and to establish to what extent the nodal points of the debate are addressed in it. It is in the nature of argumentation that an arguer selects those topics which are more likely to advance their position. However, failing to address issues that have been raised by the opponents weakens an arguer’s position and reduces their persuasiveness. Thus, claims to ethicality grounded in arguments which fail to address some of the critical questions typically posed by opponents are bound to be found unconvincing by skeptical or differently-minded interlocutors.

It may well be that contrasting positions in the GMO debate are so entrenched that little can be done to find some form of convergence or compromise. Nonetheless, analyses such as the one carried out in this essay may contribute to a better understanding of communicative pitfalls in existing debates and suggest possible ways of overcoming them.