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A Gricean analysis of discursive strategies in decision-oriented science: *Bullshit*, uncertainty, and meaning

Uma análise griceana das estratégias discursivas em ciência orientada para tomar decisões: *bullshit*, incerteza e significado

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ABSTRACT

The popular notion of bullshit and the term that expresses it has received little philosophical attention despite the fact that it pervades much of human discourse. Frankfurt recovered bullshit analysis in the eighties and opened the way to studies on its nature and function. Our interest in bullshit is philosophically analytical, but also practical, as bullshit particularly affects the field of science policy. In order to understand that double character, we first present Grice's model of meaning of expressions and then summarize the controversy between the tobacco industry and the US Administration, which allows us to state our basic hypothesis: tobacco companies have developed and implemented a discursive tactic of bullshit in order to delay or avoid governmental regulations and decisions. Before eventually applying the Gricean model to various cases of bullshit, we locate our approach against the background of the comparison between sound and junk science.

Keywords: Grice, intention, meaning, tobacco industry, bullshit, junk science, uncertainty.

RESUMO

A noção popular de *bullshit* eo termo que expressa não receberam atenção filosófica excessiva, apesar de que se estende por grande parte do discurso falado e escrito. Frankfurt recupera a análise do *bullshit* na década de 1980 e, assim, abriu o caminho para estudos sobre sua natureza e função. Nosso interesse na *bullshit* é especificamente analítico, mas também pragmática na medida em que afeta o domínio da política da ciência. Para entender esse caráter duplo, primeiro apresentamos o modelo de Grice do significado de expressões de linguagem e, em seguida, depois de sintetizar as principais disputas entre a indústria de tabaco e a administração dos EUA, estabelecemos a nossa hipótese de base: as empresas de tabaco têm desenvolvido e implementado uma técnica discursiva do *bullshit* a fim de retardar ou prevenir muitos regulamentos e decisões do governo. Antes de finalmente aplicar o modelo griceana a vários casos de *bullshit*, colocamos nosso foco contra um fundo no qual a discernir a 'boa ciência' da 'má ciência'.

Palavras-chave: Grice, intenção, significado, indústria de tabaco, *bullshit*, má ciência, incerteza.

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Introduction

For the second half of the twentieth century, the tobacco industry has opposed governmental regulation on the sale and consumption of cigarettes. The discussion between both sides has taken place in several arenas, primarily the courts, the public media and the academic-scientific community.[2] One of our aims here is to study the strategy used by the tobacco industry from a double philosophical perspective: firstly, we shall establish a frame for understanding this strategy in terms of Paul Grice's (1989b [1969]) model for analyzing the concept of meaning by means of intentions. Secondly, we shall conceptualize the form that this strategy takes in order to generate uncertainty – making this an example of the production of bullshit.[3] Of course, we recognize that there are different cases – asbestos, chemical industry – where controversies have emerged between the scientific community and corporations. However, the "tobacco wars" are unique on account of two features: their more direct repercussions on the general public, and the duration of the dispute. It cannot be forgotten that during the second half of the twentieth century, the tobacco industry took great care and attention to detail in trying to activate an "anti-causalist" strategy that could detach itself from cancer and other smoking-related diseases. Evidence of this is provided by Michaels and Monforton who point to several clear preferences of the tobacco industry, which make plain its intention to activate such an "anti-causalist" strategy.[4] It is these kinds of statements to which we will apply Grice's model in order to both understand the meaning of those words and detect the obstacles confronting this attempt at comprehension. The production of bullshit meets our goal.

Bullshit

In a nutshell, bullshit is a kind of discourse that aims at generating confusion and inscrutability for an audicence receiving a message. Although neither elegant nor accurate, the word "bullshit" connotes something that all of us can understand in everyday speech practice. It is claimed that bullshit is effective above all when the audience is drawn into a state of confusion because the bullshitter lacks any concern for the truth (Frankfurt, 2005 [1986], p. 30; Belfiore, 2009, p. 343). This may be correct, but it is not a complete diagnosis.

The bullshit notion serves as a starting point for a conceptual analysis of several discourses that appear in scientific policies with an intentional quality in their communicative acts (see Plunze, 2010, p. 235), since it always points to something and tries to obtain something. Bullshit usually appears in allegedly communicative acts – advertising, political, economical – and has become more and more sophisticated as a technique. The two best studies on bullshit to date are Harry Frankfurt's (1986) and Gerald Cohen's (2006) articles. We shall call them, respectively, the *agency analysis* and the *content analysis*. We start with them.

Agency analysis: Beyond the truth-value

Frankfurt studies the agent that commits bullshit. He poses the crucial question in the following way: "when do we know that somebody is committing bullshit?" According to him (Frankfurt, 2005 [1986], p. 33), whenever someone who generates and displays a message does not care about the truth-value of it, but attempts to hide her lack of interest, then she is committing bullshit. As Penny (2005, p. 12) summarizes it, "the liar still cares about the truth. The bullshitter is unburdened by such concerns". Frankfurt prefers to focus on the agent's identity, not on the product of her bullshitting.

Frankfurt starts from two considerations about the bullshit phenomenon: first, he claims that the use of the word "bullshit" is very wide and varied; and second, he recognizes that the phenomenon of bullshit is also too wide and amorphous. From this he proceeds to refine the definition that Black proposed of the word "humbug"[5] (Black, 1983, p. 141) and concludes that one of the most relevant characteristics of the bullshitter is that "the truth-values of his statements are of no central interest to him; what we are not to understand is that his intention is neither to report the truth nor to conceal it" (Frankfurt, 2005 [1986], p. 55). The bullshitter – the agent – then hides the fact that she actually does not care about the truth-value of her statements. That is why her intention is not to tell the truth, but rather to conceal it. Her reasons for discussing and writing about certain things bear no relation to any interest in discovering how those things actually are. It is clear that Frankfurt refers to the agent and not directly to the bullshit concept. It is the agent that he cares about, and in some ways he presupposes that it is actually the most important thing about bullshit.

Bullshit, lies, and fakery

Bullshit status is polyedrical, which renders Frankfurt's characterization unsatisfactory, at least if we wish to under-

[2] The analyses requested by the tobacco industry were performed by academically recognized scientists and published in *Tobacco and Health Research*, a journal managed by scientists (Michaels and Monforton, 2005, p. 40).

[3] From another perspective, Austin first and then Searle proposed several discursive analyses based upon the notion of *speech act*.

[4] We use 'utter' and 'utterer' in Grice's artificial sense, namely "to cover any case of doing x or producing x by the performance of which U (utterer) meant that so-and-so" (Grice, 1989a [1968], p. 118).

[5] Black admits that the best he can supply is an approximation of the definition of "humbug" in the following terms: "deceptive misrepresentation, short of lying, especially by pretentious word or deed, of somebody's own thoughts, feelings, or attitudes" (Black, 1983, p. 144).

stand the notion as generally valid. Cohen claims that the alleged essential element of bullshit is not necessesarily "indifference-to-truth" (Cohen, 2006, p. 124). For instance, the semantic variant of "bullshit" in fields such as propaganda, advertising, politics and ideology hardly could be lined up with Frankfurt's agent-essentialism. Advertisers and politicians often try to direct us away from the right apprehension of reality and to design what Cohen does call "bullshit", but according to Frankfurt, this would amount to *lying*, not bullshit.

In this way, then, Frankfurt would claim that advertisers and politicians do not typically commit bullshit, at least in his sense, but rather some kind of act of lying. However, Cohen emphasizes that lying is not independent of bullshit, but rather a feature of it. He thinks that a part of the action of lying – not all – is bullshitting, and that is why he claims that Frankfurt's analysis is too limited (Cohen, 2006, p. 125) and that the confrontation the latter establishes between lying and bullshitting is wrongly posed. In order to improve upon it, Cohen proposes to distinguish between *tactic* and *goal*. Usually, the liar says something she believes to be false: that is her *tactic*. But she also seeks to deceive her audience about some fact: that is her *goal*. Eventually, she achieves her goal by performing the tactic: she says something that she thinks is false with the aim of inducing her audience into believe something false.[6] Few liars, if any, bother themselves to *induce* false beliefs in others.

Cohen's distinction between tactic and goal sheds new light on and enhances Frankfurt's difficulty in distinguishing between lies and bullshit. Whereas identifying a lie by its goal – to misdirect someone in relation to reality – Cohen identifies the bullshitter's activity in terms of what corresponds to the bullshitter's tactic (Cohen, 2006, p. 127). It seems that Frankfurt cannot distinguish between the level of the tactic and that of the goal. He says that bullshitting involves a kind of bluffing, and that lying and bluffing are both modes of misrepresentation or deception (Frankfurt, 2005 [1986], p. 46). The closer concept to a lie is falsity, since the liar is someone who promulgates a falsehood; bluffing is similar, but more specifically it is a matter not of falsity but of fakery. And, as Frankfurt recognizes, this is what accounts for its proximity to bullshit, given that the essence of bullshit is not that it is false but that it is phony (Frankfurt, 2005 [1986], p. 47).

According to Cohen, Frankfurt's problem is that he locates falsity at the tactical level, whereas fakery relates to goals. If a bluff is similar to bullshit, it is just because bullshitting often involves falsity, although the bullshitter usually does not utter the falsity as such. Cohen criticizes Frankfurt's claim that the bullshitter may not be interested in the truth-value of what she utters (Frankfurt, 2005 [1986], p. 39) because, according to the former, the latter mistakes it for a lack of interest in whether it causes the audience to believe that something is true or false. We should accept that advertisers may not be interested in whether or not what they say is true, but they are concerned about their credibility. Advertisers want the public to believe them. In other words, they focus on the thought processes that they want to provoke in consumers, in spite of the fact that they eventually want to sell something.

Content analysis: The nonsense

Bullshit is inherently associated with unclarity and nonsense, according to Cohen (2006, p. 129). Unlike bullshit, the lie is identified in terms of falsity together with other features attributed to this, say, intention. The concept of a liar is elucidated in terms of falsity, not vice versa. Equally, the elucidation of the nature of a bullshitter (an agent) can be obtained in terms of the thing to which it points: the bullshit itself. In order to clarify the notion of bullshit, Cohen appeals to the *Oxford English Dictionary*, which defines it (first entry) as "nonsense". This definition places the bullshit, as an entity, into a textual category. It refers not to an activity, but basically to the linguistic outcome of an activity.

The liar might tell the truth without any intention of doing so, and a non-liar might tell something false by accident. Any agent who attempts to bullshit could fail and a truth lover could accidentally bullshit. Well then, anyone who speaks with indifference in the face of truth, in Frankfurt's sense, could say something true regardless. However, in the sense that is interesting for Cohen, what she says would not be bullshit. In addition, an honest person could read something that is bullshit – written by a Frankfurtian agent – take that article for granted, and then reproduce it. Whenever that person unconsciously expresses bullshit, she will not be disrespecting the truth-value, and that is why it is neither necessary nor sufficient for all kinds of bullshit that it is enacted by someone who is indifferent to truth or to any other distinctive intentional condition. And there exists bullshit characteristic of linguistic utterances that would not be bullshit according to the intentional condition of the generator of such an utterance.

Now, this feature of the utterances is a variety of nonsense peculiar to the discourse that cannot be elucidated as such. It is not just a dark discourse; it is also one that cannot be clarified; it is non-elucidable and involves two aspects inherent to it: first, it is rubbish, since it is a logically faulty argumentation with regard to evidence; and second, it is a hopelessly speculative remark that is neither obtuse nor logical.

Cohen does not define "clarity", although he does provide a sufficient condition for its lack: somebody lacks clarity if when a negation sign is added to or substracted from a text, its degree of plausibility does not change (Cohen, 2006, p. 131). Our reading stems from this is double moment: (i) the bullshitter is willing to bullshit, that is, to yield a lot of obtuse statements that cannot be elucidated – rubbish or

[6] This is not the last goal of a liar, of course, since usually lying has a subsequent goal, say, to protect one's reputation, to secure some benefit, or to take advantage of somebody, and so on.

gratuitous remarks; (ii) the bullshitter points to the bullshit. That is, unlike the naïve speaker who "bullshits" – that is, is a victim of it – the bullshitter wants the bullshit to be impossible to clarify or trust. The bullshitter resorts to bullshit when she has reasons for intending that what she says is purposely unintelligible and in order to impress others or to give false support to some claim or another.

Bringing bullshit into Grice's model

We find two key notions in Grice's model that can serve to collect and improve the treatment that Frankfurt and Cohen respectively make of the notion of bullshit: the intention of the speaker and the recognition of the intention of the speaker on the part of the audience. As we will see later, according to Grice's model, whenever a speaker utters something, she does it with the double intention of communicating something and of being recognized by the audience (Grice, 1989b [1969], p. 88). Intention is crucial for shaping an utterance and for the recognition of this fact by the audience. So if we consider Grice's model, we can see that there are three basic elements: (i) an utterer that has an intention; (ii) an utterance (or uttered message) with a meaning shaped by both the utterer's intention and the recognition of that very intention by the audience; and (iii) the audience's reaction with regard to the recognition of some intention.

As we have said previously, Cohen proposes to distinguish between *tactic* and *goal*. The liar's tactic consists of saying what she believes that is false, and her goal is to deceive her audience about some particular fact. That is why she aims at her goal by way of performing the tactic; that is, she says something that she thinks is false with the intention of inducing her audience to believe something false.

If we want to fit Cohen's approach, which in turn criticizes that of Frankfurt, into our Gricean model, we can resort to a search for the sufficient conditions for the truth of the statements, or discourse, that we would wish to analyze. Consider the following statement:

> *[S1] Michael means that Jean is a great athlete by the utterance of the statement 'Jean is a great athlete'.*[7]

Let us figure out that the utterance of S1 is addressed to a third person, so that this acts as an audience. In this case, a first attempt for a sufficient condition for S1 could be this:

> *[SC-1] Michael intends that his utterance of the statement expressed induces in the listener the belief that Jean is a great athlete.*

But Grice does not settle for SC-1, since the intention to induce a belief in the audience is not something sufficient by itself for it to mean something fixed (a meaning). The SC-1 condition seems to require something else, which in a Gricean model would take this form:

> *[SC-2] Michael also intends that the listener recognize the intention lying behind his utterance of the statement.*

However, in Gricean terms, CS-2 also does not provide the sufficient condition for the truth of S1, which in Grice's model requires another condition:

> *[SC-3] Michael must also have the intention that the listener's recognition of his intention plays a role in explaining why the listener forms his belief (namely, that S1 is true).*

Since bullshit has to do with the lack of clarity and nonsense, according to Cohen (2006, p. 129), and since a lie is identified in terms of falsity together with other features attributed to this, basically an intention, Grice's three conditions pick up both notions of bullshit, i.e., both Frankfurt's and Cohen's. In Frankfurt's sense, bullshit is far removed from truth-value, which in the Gricean model requires at least three steps; that is, there is no direct semantic relationship according to which we can identify the truth-value of the statement. And in Cohen's sense, the truth-value is embodied in the speaker's *tactic* (in this case she would be a mere liar) and the commission of what is properly bullshit is dependent on its *goal*, in which the intention (to deceive) is crucial. Here Grice's model allows us to expose in more detail the complexity of this intentional process by incorporating both the speaker's "intention of recognition" and her "intention of recognition of intentions". Let us see how this apparently odd analysis can be extended to cases of a real discourse of the scientific practice and of scientific policy.

A Gricean frame for bullshit

Grice (1989b [1969]) proposes the concept of *utterer's meaning* for two reasons: on the one hand, it may serve as the ground for a general concept of meaning and, on the other, it may be what makes the difference with regard to the concept of *meaning of an utterance*. The underlying idea is that we have to analyze the meaning of the utterer if we want to understand the meaning of any utterance. The distinction between both kinds of meaning is not trivial then. Its relevance rests on the fact that the utterer's meaning allows for the introduction of a key element into the study of conventional meaning, namely the *intention*. It is necessary to take this notion into account in order to implement Grice's *conversational maxims* (Grice, 1989c [1975], p. 26-27) and to assess whether or not – in the case of a discursive controversy such as "tobacco wars" – they are met.

[7] We will always refer to the case of *unnatural* meaning (see Grice, 1957, p. 378f).

Intentions and utterer's meaning

According to Grice's model, whenever a speaker utters something, she does it with the double intention of communicating something and of being recognized by the audience (Grice, 1989b [1969], p. 88). Hence, intention is crucial for shaping an utterance and for the recognition of this fact by the audience. So in Grice's model, we have three elements: (i) an utterer who has an intention; (ii) an utterance (or uttered message) with a meaning shaped by both the utterer's intention and the recognition of that very intention by the audience; and (iii) the audience's reaction in relation to the recognition of some intention – *in principle*, the real intention of the utterer.[8] In the section "Utterances, uncertainty, and bullshit: Applying Grice's model", we shall appeal to these features in our case study.

Grice proposes four kinds of uses of "meaning": (1) the timeless meaning of *x*; (2) the applied timeless meaning of *x*; (3) the occasion-meaning of *x*; and (4) the occasional meaning of the speaker.[9] The first three kinds may be explained in terms of the fourth, and this last one can be articulated by means of the utterer's intention (Grice, 1989b [1969], p. 88-90). This allows us to reproduce the main aspects of Grice's model – later we will apply these to the case study (see Grice, 1969, p. 105, *Outline of the meaning based on intention*):

> *U utters x intending A:*
> *(1) to produce* r,
> *(2) to think U intends A to produce* r,
> *(3) to think U intends the fulfillment of (1) to be based on the fulfillment of (2).*
> *[U: utterer; A: audience; r: action; x: utterance]*

Applying the outline to the case of the tobacco industry, U symbolizes the industry and A the public – citizens, policy-makers, judges, consumers, and so on. If we point specifically to the role played by intention, we can say that the tobacco industry planned a discursive strategy of manipulation addressed to the audience of its messages.

Grice's outline is supplemented with a Principle and four conversational maxims in order to detect the communicative and significant adequacy of discourse, basically the conversational efficacy. Because of this, we will be able to display the "fiddles" that appear in the communication between the tobacco industry and the public realm.[10] According to Grice, "our talk exchanges do not normally consist of a succession of disconnected remarks, and would not be rational if they did. They are [...] cooperative efforts; and each participant recognizes in them, to some extent, a common purpose" (Grice, 1989c [1975], p. 26). In light of this, Grice establishes a "Cooperative Principle": "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice, 1989c [1975], p. 26). This general principle is supplemented with four categories in which to place other maxims for communication and meaning: quantity; quality; relation;[11] and manner. According to the quantity category, the utterer must provide as much information as she can, but no more than necessary. The quality category, in turn, dictates that the utterer must not say something she takes to be false or even claim something with insufficient evidence. The category of manner requests that the utterer not be unclear and ambiguous, but rather brief and orderly (Grice, 1989c [1975], p. 27-29). Here we shall appeal to the categories of quantity, quality, and manner. In addition, it is worth noting Grice's caveat that in some cases maxims can be violated with no intention and that, in fact, in casual conversations, this is common. In any case, this is not the type of communicative exchange with which we are concerned here (see Simons, 2010). We have two key elements that support our argument: Grice's model for meaning analysis, and the conversational maxims.

Uncertainty, sound science and junk science

The strategy of questioning the science by means of bullshitting in order to prevent regulation has been developed for decades by polluters and producers of hazardous products, and the practice is now so common that it is stranger for science to not be challenged by some company or other that faces regulation.

In the USA, the National Toxicology Program[12] (NTP) of the Department of Health and Human Services publishes a list of substances that can cause cancer. Before a new substance is added to the list, a public procedure of independent scientific reviews is performed. Aiming at avoiding the tag "it causes cancer", scientists hired by industry have come to oppose the description "it causes cancer" in the case of alcoholic beverages, beryllium, ethylene oxide, nickel compounds, and so on, thereby defying the empirical evidence that underlies the proposed designation (Gough, 2003, p. 10).

[8] We emphasize the expression "in principle" because it is not always the real intention that is recognized, but another one. And as we shall see, to admit this is a basic point for our argument.

[9] We are particularly focusing on the speaker's occasion-meaning (Grice, 1989b [1969], p. 90-91).

[10] We use "fiddle" and not "mistake" because Grice's maxims refer to communicative mistakes, but here that is not the case, since some degree of intention is involved.

[11] We put aside this category because Grice himself does not develop it in his relevant texts for our purposes. In any case, since *relevance* and *appropriateness* are under the same range as that of the maxim of relation, they are equally violated in the tobacco war queries.

[12] "National Toxicology Program" (http://ntp.niehs.nih.gov/).

When considering the option of new regulations, those who oppose them raise the issue of scientific uncertainty, dismissing the force or the conclusive nature of evidence. For instance, the scientific community has reached a consensus and agrees that the broad spectrum UV radiation from the sun and tanning bed lamps cause skin cancer. However, some associations – most notably the Indoor Tanning Association – have tried to detract from the NTP designation by questioning the scientific evidence on which UV radiation was deemed carcinogenic (Michaels and Monforton, 2005, p. 39).

From the perspective of the companies involved or of the so-called *movement of the junk science* (Huber, 1991), there is an attempt to influence public opinion through the devaluation of the results of scientific research that might threaten their interests. They adduce that many scientific studies and methods used in the regulatory and legal scenarios are defective, inconsistent or incomplete, classifying them as erroneous and premature to form the basis for possible regulations. Thus, they use the concepts of *certainty* and *uncertainty* in a very skewed way.

Scientific uncertainty is inevitable in designing disease prevention programs. People cannot be fed with toxic chemicals, for example, in order to see what causes cancer; instead, the effects are studied in laboratory animals. Both epidemiological and laboratory studies contain many uncertainties, and scientists must extrapolate from specific evidence of these studies in order to causally infer some results and recommend protective measures. Certainty or absolute certainty is rarely an option (see Blumberg *et al.*, 2010, p. 481-484).

Now, the key mechanism to generating and manipulating uncertainty is precisely to overstate the importance of the latter. It has allowed the delay of many regulations and measures to protect the health and safety of individuals and communities. It is a *public relations* strategy that now also applies to legal issues aimed at constraining the capacity of the judicial and regulator systems to address issues of public health and compensation to victims.

A paradigmatic case: The tobacco industry

The tobacco industry is one of the most ardent promoters of doubt and uncertainty about the scientific research that concerns it. Since the 1950s, scientists specifically recruited for this industry were basically dedicated to question the following beliefs:

(i) the risk of death from lung cancer is higher in smokers than in nonsmokers,

(ii) the role that smoking plays in heart and lung disease is highly important, and

(iii) smoking in public places increases the risk of disease in passive smokers.

In each case, the scientific community has unanimously admitted that smoking causes these conditions. However, the industry has campaigned to delay regulation and compensation for victims for decades. In the mid-1950s, its strategy was created by Hill & Knowlton (H&K), a firm specializing in public relations and related fields. With its help, the tobacco industry focused on two core aspects of the relationship between smoking and risk: (i) cause-effect relationships had not been established; and (ii) the statistics did not provide an answer. The goal of the industry was to promote a high level of scientific uncertainty, as H&K recognized in a memorandum where it is said that after five and a half years of effort, "an awareness of doubt and uncertainty around criticisms of snuff" has been successfully created (Michaels and Monforton, 2005, p. 40). It aimed at forcing the public to recognize that the theory that smoking causes lung cancer was not scientifically established.

The industry recognized the value in magnifying the debate on the cause-effect relationship in the case of smoking and lung cancer. To this end, in 1960 it started its own strategy for fostering doubt: "Doubt is our product since it is the best way to compete with 'facts' that are on the minds of the general public. And it is also the means for establishing a controversy" (Michaels and Monforton, 2005, p. 40). However, the tobacco industry has not been the only one to benefit from a strategy of this kind, since the generation of doubt about evidence, findings and methodologies is ubiquitous in some groups opposed to governmental attempts to regulate health hazards.

Managing uncertainty

There were two basic ways of artificially manipulating the uncertainty generated by an industry that potentially faces regulation, namely the denial of *the obvious*, and the denial of the existence of *conclusive results*. The first begins to take shape in the 1920s, when in the lead, asbestos, and chemical industries one can perceive a tendency to downplay and even deny the validity of methods and scientific results. In the early 1950s, a well-publicized investigation into the US Congress stoked the public interest in carcinogens in food. For two years, the Delaney Committee investigated "the nature, extent and impact of the using of chemical substances" in food. The committee listened to testimonies on the presence of chemicals – carcinogenic to animals – in food for humans.[13] The Manufacturing Chemists' Association (MCA) feared that, in order to allay public suspicions about additives and pesticides in food, the Congress forced the industry to test chemicals that were pollutants or, at least, ready to be added to foods. In response, in 1951 the MCA hired H&K, which designed a plan for responding to the Delaney Committee.

[13] See the Committee on Scientific and Regulatory Issues Underlying Pesticide Use Patterns and Agricultural Innovation, National Research Council (1987, p. 174-176).

The efforts of the MCA were partly successful and Congress did not accept legislation that would respond to the expected evidence; instead they accepted less strict legislation in demanding regulation of chemicals in food. It was 1958 when Delaney could forbid the inclusion of *cancer causing* chemicals in foods, although the "Delaney clause" did not prevent the inclusion of chemical substances in food. This actually was a sort of success for H&K, which went ahead and designed a campaign based on a similar strategy to convince the public that smoking was not dangerous.[14]

The second type of strategy has been more subtle and corrosive to regulations. Although it was tested in the asbestos case, in the 1970s it was designed with greater sophistication. We should not forget that the set of regulatory agencies (EPA, OSHA, MSHA, NHTSA)[15] was created in the US precisely in that decade in order to protect the environment and public health. But the response was immediate and took the form of a direct attack on the critical flank of all decision-making, namely the *science underlying regulation* (or *decision-oriented science*).

The industry facing OSHA's regulation did not intend to recognize those reports of scientific results that did not document a high proportion of disease among its own employees exposed to a particular substance, and that hence were not a sound basis for regulating such a substance. In this way, the tobacco industry indiscriminately extended claims that were not based on any epidemiological research. Reports were written under the claims that the human data used were not representative, that data obtained in animal studies were not relevant to human health, and that exposure data were incomplete and unreliable.[16]

Junk science

Those who seek to discredit scientific results and methods that are not in the interests of the companies that have to conform to government regulations have coined a very effective derogatory nickname: "junk science". In opposition to its antagonist, "sound science", "junk science" is defined as "work presented as valid science that falls outside the rigors of the scientific method and the peer review process. It can take the form of presentation of selective results, politically motivated distortions of scientifically sound papers, or the publishing of quasi-scientific non-reviewed journals" (UCS, *Union of Concerned Scientists*) (Herrick and Jamieson, 2001, p. 12).

By the term "junk science", some private companies are particularly concerned with the science that underlies reports regulating hazardous substances for health and safety (Michaels and Monforton, 2005, p. 43).[17] Their main argument stresses that regulatory scientific methods are flawed, contradictory and incomplete, or they lack certainty in their results. Consequently, it is concluded that scientific reports are a hasty attempt to enforce new forms of regulation (Michaels and Monforton, 2005, p. 43). On the basis of that conclusion, they intend to create uncertainty by linking regulatory scientific activity to five shortcomings typically associated with what apparently a scientific activity is, but that actually is not (Herrick and Jamieson, 2001, p. 12):[18] lack of appropriate credentials (appropriate background or training); lack of peer review; lack of publication; weak bibliographic lineage; and outright fraud. Any of these could appear in the most common areas of regulatory disputes: the court and academia. In the latter, the problem provoked by the conceptualization of "junk science" is evident, given the need to establish a valid criterion to distinguish the sound science from the "junk" science.[19] Haack (2005) has shown the difficulties in trying to concisely define the expression "junk science" and the negative consequences of its biased use. In this context, generating uncertainty extends the problem until it comes to affect the very choice of assessors of those reports denounced as "pseudoscience" and, therefore, affects the putative definition in which a judge could base her verdict on whether or not a report is defective (Haack, 2005, p. 66-68).

The main problem with studies of hazardous substances is that they are statistical. It is known that in epidemiological studies some uncertainty always appears. For example, in the laboratory only animals[20] can be used and in field studies it is not possible to isolate the subjects from chemicals that supposedly cause disease (Haack, 2005, p. 60). As a result, cor-

[14] As Miller (1999, p. 129-130) points out, H&K recommended that the industry set up a research program to at least "demonstrate that a controversy existed".

[15] Environmental Protection Agency, Occupational Safety and Health Administration, Mine Safety and Health Administration, National Highway Traffic Safety Administration.

[16] The case of the dichloro-benzidine (DCB) is an illustrative instance of this.

[17] Many exaggerated cases of claims – such as "global warming is non-existent" – can be found in "Junkscience.com" (http://junkscience.com) (see Milloy, 1996).

[18] This reflects how "various movements, parties, and interest groups can bestow the plenary authority of science on their own private meanings. With a little creativity in the art of conjuring, any group can make its views seem scientific" (Toumey, 1996, p. 151).

[19] Haack points out that some attempts have been made in order to both define what sound science is and distinguish it from junk science. In addition, some methodological standards have been proposed to be met, the form of that kind of knowledge has been given, and eventually it has been brought to the court (Haack, 2005).

[20] In order to develop a cancer in a human, a time span of at least thirty years is needed, and since most animals do not live long enough to develop a cancer, this is a serious problem for extrapolations from studies with animals. Alternatively, animals are subjected to higher exposures of the supposedly harmful element. Proponents of the substance in question argue that the level of exposure never occurs in the case of humans (Michaels, 2008, p. 67-68).

porations argue that government regulations cannot substantiate reports containing any doubt or uncertainty. Obviously, these are unreasonable demands of accuracy that no regulation could meet, since no reports are produced under conditions of absolute certainty (Mitchell, 2009, p. 86). If certainty were a prerequisite, the degree of probability of death among the population or of damage to the environment would increase (Haack, 2008, p. 70-73).

If, for instance, we surveyed 100,000 smokers for thirty years[21] by exposing them to harmful products that are not cigarettes, the relationship between smoking and developing some heart (*cardiovascular*) disease would be "lawful" if 80% of the studied subjects would develop it. But let us design a study with a smaller sample and a time span of five years. It would be then very probable that subjects would not get cancer. The demand of certainty therefore is used with the aim of showing that smoking is not harmful according to the available knowledge at that time and due to definitive results in a very brief period of time (Michaels, 2008, p. 62).

Similarly, it is worth noting that there are still several scientific and legal gaps where the tobacco industry could oppose the scientific methods underlying the regulatory policies of governmental administrations. Mistakes in exposures classifications, inapproppriate sample choices, lack of the necessary time, defective re-analyses, and other factors that could bring about one and the same disease are illustrations of this.[22] Hence, from now on we shall attempt to show how the tobacco industry has tried to avoid the regulation of cigarette consumption by manipulating the recipients of its messages.

Utterances, uncertainty, and bullshit: Applying Grice's model

We are going to use some particular cases in which the tobacco industry has responded to attempts by both governmental Administrations in the US and several civil associations to support new forms of regulation (see Michaels and Monforton, 2005). Our application of Grice's model will point precisely to these cases.

Once the scientific community had established the common view that linked smoking to certain diseases, the H&K firm began a media campaign in order to minimize the effect of the reports published by the American Cancer Society, which associated smoking with cancer. In 1954, the journal *True, the Man's Magazine* published an article ("Smoke without fear") by Donald Cooley in collaboration with H&K, that allows us to establish our strategy of analysis. From a linguistic perspective, two statements or utterances are noteworthy here: "if you are a man or a woman who smokes, take it easy and enjoy", and "if you are a smoker, smoke without fear" (Cooley, 1954, p. 1-2). These statements point directly to a conclusion that Michaels and Monforton (2005, p. 40) confirm, namely that in a confidential memorandum consultors of H&K said that in a year and a half they had to create enough uncertainty about the theory that related smoking to cancer by making the public believe that there was no sound scientifically established discourse against smoking. H&K obtained what it wanted.

In 1960, H&K began publishing the journal *Tobacco and Health Research* with the main goal of generating doubts about the theory that linked smoking to some diseases (Haack, 2005, p. 40). In addition, its strategy explicitly included the manipulation of language and hence the forming of beliefs to the point of claiming that "doubt is our product" (Michaels and Monforton, 2005, p. 40). The key point of this last statement was to make the public think that there is no scientific consensus about the links between smoking and cancer. So, these examples are clear cases for our hypothesis to be implemented.

Let's see first how the manipulation thesis can be illustrated by applying Grice's model structure. We shall analyze two cases falling under the model of meaning linked to intention, and before studying several instances in which the Cooperative Principle is not met. The first statement we analyze (e_1) is one proferred by H&K in 1955 (Bates and Rowell, 1998; Michaels and Monforton, 2005, p. 40):

[e_1] The "cause-effect" relationship is not proved.

The statement points to the relationship between smoking and some disease, usually cancer or heart disease. There is a plain disjuncture between the utterer's actual intention and the intention that the audience recognizes on the utterer's side. The utterer (tobacco industry) wants the audience not to perceive the existing scientific consensus about the direct relation between smoking and the fact of suffering some disease. The utterer expects that the audience receives a particular intention, namely that the utterer is disinterested and impartial about the truth-value of reports published by the Administration. However, the utterer does not explicitly transmit their intention, since the scientific community had come to a consensus by that point (Michaels and Monforton, 2005, p. 40). The message received by the audience carries the clear intention of

[21] Most reliable epidemiological studies last between 20 and 30 years because a cancer caused by chemicals takes a long time to appear. Some epidemiological studies lasting less than 20 years are suspected of seeking negative results in order to raise doubt (Michaels, 2008, p. 65).

[22] Often an *unrepresentative* sample of the actual population is chosen – e.g., workers at risk of accidents – so that the mortality statistics of the studied disease are less significant than expected. When we have two chemicals that cause cancer and the sample is exposed to both, the most commonly used trick is to divert attention. For instance, a cancer caused by asbestos is indistinguishable from one produced by the consumption of cigarettes, and the chosen sample cannot be sufficiently controlled in order to be isolated (Michaels, 2008, p. 64).

conveying impartial information about several reports. The problem, of course, is that this is not the utterer's actual intention. The disconnection between the actual intention and the perceived one (not made explicit yet) is hence plain.

Intention plays a relevant role in each stage of communication, whether it is the utterer's intention or that of the audience (Grice, 1989b [1969]). The Gricean analysis of the different unnatural meanings allows him to directly tie together the utterer's occasion meaning and intention, as outlined below. If we apply Grice's model, U utters x with the following intentions:[23]

(1) *A to produce a particular response r*: r consists in that A thinks there is not a consensus within the scientific community (Grice, 1989b [1969], p. 92). This intention is implicit in another more general intention, namely that of disinterestedly informing, although the latter one is not made explicit to A. A believes that the tobacco industry intends to disinterestedly inform the public about the "truth" of some reports uttered by the Administration. With A's belief at hand, a new belief rises as its effect, namely that there is no consensus but just some scientific controversy about it. If U's actual intention were explicit, A would distrust it, since interests at stake would become apparent.

To identify a concealment of the truth-value of a statement in this procedure, we should make it explicit. In that case, because the utterer hides her actual intentions in order to satisfy them, we can see that the truth-value actually underlies U's intention. If U would not hide the statement of both her actual intention and its truth-value, then it would be much more difficult to achieve her goal (i.e., to make A believe that there is no scientific consensus). Grice believes that meaning depends ultimately on the intention (Grice, 1989b [1969]), but in that case the actual meaning of the tobacco industry's utterance is one, but that received by A is a different one, since the real intention and the intention understood after the utterance are different.

(2) *A to think (recognize) that U intends (1)*: U utters something intending that A recognizes U's intention. When U utters x, she does not wish for A to behave as if it recognizes U's actual intention – i.e., that U continues to smoke without worrying about her health because she sees no consensus. By uttering x, instead, U wants A to infer that there is no consensus. This conclusion must be the product of the explicit statement of an allegedly first intention: that of disinterestedly informing. However, this is misleading because U's intention is that A does not recognize the former's real intention. Hence, A does not act on the basis of recognizing U's real intention. In uttering x in front of A, H&K presents itself as impartially critical toward other scientists' judgment.

(3) *A to fulfill (1) on the basis of her fulfillment of (2)*: according to A, U's intention is that of disinterestedly informing the audience about the issue, and accordingly A acts by recognizing that intention. But in fact U's intention is different, although (1) is produced and U achieves her goal. A believes that there is no consensus and then implies that she must not worry about any disease; she reaches this conclusion when she believes that U's intention is other than the real one. U wants this information "input"[24] to be transparent and A believes that U is showing her intentions. A believes that U wants (1) to be fulfilled in terms of the fulfillment of (2). This is where the disregard for the truth-value takes place.

If we remake (3), this is what we may obtain: *A thinks that U expects that A recognizes U's real intention and A acts according to the recognition of that intention*. The mismatch emerges from the fact that A does not recognize U's real intention, but rather that which U wants her to recognize – and it is not the real one. In this case, A allows U intending (1), (2) and (3), and that all these are fulfilled, although she believes that she recognizes the real intention and acts accordingly.[25] Otherwise, the deception would be explicit. So we see that U (the tobacco industry) intends for A (smokers) to think that U intends r (continue smoking), and that this is based on both the recognition of U's real intention and A's believing in it.

Let's analyze the second statement:

[e_2] Statistics do not prove the answers.

This statement points out that (statistical) reports do not ensure the cause-effect relationship; that is, they cannot provide evidence to fully support their thesis, so must comply with the best available evidence at the time. Companies' consultants actually rely on this lack of accuracy to defend their points, despite the fact that repealing the regulation could cause much damage to public health (Michaels, 2008, p. 60). The tobacco industry intends to let the public know that these reports are not absolute, but rather based on inconclusive evidence and as such remain insufficient to support a possible proposal for regulation.[26] The public captures the intention of the industry as something right – as an attempt to scrutinize these reports, as if the Administration had a tacit intention that was not to preserve public health.[27]

[23] U: utterer (tobacco industry), A: audience (the public), r: response by A, x: U's utterance.

[24] This *input* is intention that A recognizes in U's uttering, since the latter aims to be recognized as sincere.

[25] It cannot be said that A acts only because she thinks she recognizes U's real intention; in fact, there are other contextual factors that drive A to produce r, although the recognition of intention is crucial in this task.

[26] Companies claim that there is not sufficient evidence to support a regulation; that is, that evidence is too weak to support proposing any regulation on the basis of a process of induction from it. Obviously, it is more doubtful to claim the possibility of absolute certainty (Haack, 2005, p. 67).

[27] The lack of information about the real working of science makes it impossible for the public to see that scientific results do not obtain by demanding absolute certainties, but rather by requesting a sufficient support for regulation. The scientific research underlying regulation usually makes inferences from limited evidence (Cartwright and Hardie, 2012, p. 135-138; Michael, 2008, p. 60).

The analysis of e_2 is the following: U utters x with the following intentions:

(1) *A to produce a particular response r*: in uttering e_2, U (the tobacco industry) intends for A to not believe the reports of the Administration and to *continue smoking* (r). As in e_1, U may effectively achieve her aim if A produces r; that is, if A doubts, to some extent, the reports that support tobacco regulation.

(2) *A to think (recognize) that U intends (1)*: U wants A to believe that U utters something intending for A to recognize her first intention (to produce r). Whenever A actually believes it, U achieves her goal. But in that case, A is wrong. U aims for A to understand the information given by the statement as a sample of the real character of the reports, since U presupposes that A does not know a lot about scientific-regulatory procedures. Thus, the process of generating confusion seems clear: U takes advantage of the belief (naive, unjustified) that certainty is necessary in order to support regulation.

(3) *A to fulfill (1) on the basis of her fulfillment of (2)*: as in e_1, A thinks that U assumes that A herself will act to the extent that U's real intention is recognized. U produces r because she thinks that A recognizes U's real intention. However, this is not necessary. Again, U's intention is tacit and is camouflaged under a different intention, full of interest and in order to cast doubt on the reports of the Administration and to buy time to keep people smoking. The strategy is to appeal to the so-called "sound science" in order to give authority to its procedures and conclusions by showing that the science achieved by industry's "collaborators" (some scientists) is good enough to overcome the uncertainties that the "junk science" generates. In all cases, the findings favor – though indirectly – the message to continue smoking.

Where is the bullshit?

We have shown that the lack of honesty on the part of H&K leads the audience to believe that there is something like objective information about smoking. But it is not so. Rather, it happens that U manipulates A because, among other things, U manages much more information than A about what happens; i.e., U is in a dominant position. On the one hand, U is able to afford scientific consensus but, on the other, U tries to show that such a consensus does not actually exist. The public, however, is involved in a clash between the industry and the Administration, and has no clear idea of who is telling the truth. Michaels and Monforton (2005) give an example in reference to the dispute between the scientific community and the industry around regulations of emissions by quoting Frank Luntz:[28] "you need to continue to make the lack of scientific certainty a primary issue in the debate […] The scientific debate is closing [againts us] but not yet closed; there is still a window of opportunity to challenge the science" (Michaels and Monforton, 2005, p. 43). In 2003, the doubts generated by this debate allowed companies to stall regulatory procedures and continue selling their products.

We have seen how the industry's critical strategy against the Administration's reports is developed. If the audience read the reports and capture the writer's intention, there would be no dispute, but Grice's model allows us to observe that it is not necessary for the industry to publish new reports. In fact, the article "Smoke without fear" is not a report, but merely an attack on the Administration's reports. This permits us to ask the following question: just using a single report with its meaning, "how can a party attempt to defend a viewpoint while another party supports the opposite view?". The answer can be found in Grice's analysis of meaning. As we identified the difference in the utterer's meaning of an utterance and the audience's one, we can now see the difference in meaning between an utterer (the Administration) and a possible audience, which alters what the public receives.

If an Administration publishes a serious report, undertaken with reliable methods, and being sufficiently clear that the scientific community agrees to propose regulations on tobacco and smoking for the whole country (USA), we would say that this is its intention. But tobacco companies then read the report, which is statistical, and without making any counter-report – or re-analyzing it, but without making any changes to its content – they propose the opposite: i.e., no regulation is necessary. Well, this example fits perfectly with Grice's idea that the natural meaning of an utterance may be understood in terms of the utterer's occasion-meaning, and this one may be construed in terms of the utterer's intention (Grice, 1989b [1969], p. 484). As has been shown, utterers say more (or otherwise) than what their utterances literally mean. Therefore, we have a single report, but different meanings, since intention changes depending on where the report is processed. For the Administration, the report is used for regulation; in the case of the industry, it is used against regulation because of supposed flaws, insufficient evidence, and other shortcomings.

We have shown that the tobacco industry has tried (probably successfully) to save time at the expense of the use of language in its favor, with statements that make explicit its intention to create doubts ("you need to continue to make the lack of scientific certainty a primary issue in the debate"), or to hide its intentions from the public ("the evidence is inconclusive"). In the case of public sphere, it is crucial to analyze the tobacco industry consultants' use of language. Here we have applied Grice's model, analysis and categories, since they are effective tools for understanding the kind of bullshit that is extending both to the regulation discourse in the USA and to the image and projection of science as knowledge and supplier of evidences.[29] In the public sphere (not academic or

[28] Luntz is a political consultant to the Republican Party in the USA.

[29] For the British case, and from a different perspective, see for instance Belfiore (2009).

judicial), articles published in several journals helped to spread the idea that smoking is not harmful by means of good advertising policy, some fallacies, and appealing to the audience's emotions. Truth-value never interested so much as outright lie. Bullshit was the main strategy with which, as we have seen by Grice's model, one can create opacity around the utterer's intention in order to make the audience trust the offered information, since this is provided in terms of disinterested information, though never lying for it. Furthermore, it is a strategy that violates some of Grice's maxims for the Cooperation Principle: firstly, the tobacco industry does not provide as much information as it can (bullshit *versus* the quantity category); secondly, the utterer does not say anything that it thinks to be false, but simply tries to claim that evidences are never sufficient (bullshit *versus* the quality category, in Frankfurt's sense); and finally, the utterer is being unclear and ambiguous (bullshit *versus* the manner category, in Cohen's sense) (see Law, 2011, Chapter 6).

Fighting against bullshit is a difficult task in cases like the one shown here. The inclusion of the concept of *junk science* in the debate has played a significant role in discrediting real scientific reports and has become a significant part of everyday language. It is difficult to counteract the effects of big business campaigns, but efforts to avoid the corruption of the concept of science should be made in order to prevent corporations from misusing language so as to delay regulations at the cost of endangering public health and the environment.

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