# "ENERGY INDEPENDENCE": PRESIDENT OBAMA'S Rhetoric of a Success Story

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## 1. Energy discourse from a rhetorical standpoint

At a time when the buzzword used by the White House to refer to energy policy is "energy independence" in the latest State of the Union Address, an expression that has clearly dethroned that of "energy dependence" recurrently referred to over President G.W. Bush's terms, the aim of this paper is to investigate, from a cognitive linguistics standpoint, the rhetorical dimension of President Obama's position towards energy and environmental policies. This piece of research is based on a series of past publications in the field of, very broadly put, "environmental discourse" in the U.S.A. (Cox 2013). Should the link between energy issues on the one hand and the environment on the other be clarified, let us underline that one of these two issues generally leads to the other, in what could be considered environmental discourse. These past years in American politics, energy discourse has always been, at some point and to variable extents, connected to environmental discourse and, more broadly, to "climate change". As a matter of fact, in the following speeches, one would have a hard time disentangling one issue from the other, discourse wise.

Because their traditional format constitutes a case in point, the corpus is based on the past five State of the Union Addresses (S.O.T.U.A.), delivered by President Obama from 2009 to 2013. Only the parts dedicated to energy and environmental policies will be analyzed in this paper. The aim is to adopt (i) a chronological perspective on the data and take a closer look at the evolution and changes which occurred in the area of communications to reach the notion of "energy independence" and (ii) a synthetic one so as to sketch out the main recurrent rhetorical strategies called upon to make the Congress, but more so the American citizens, conceptualize energy and environmental policies. Prior to these two parts, we will briefly come back on a past investigation conducted on President G. W. Bush's eight S.O.T.U.As as to how climate change and energy issues were represented (Bonnefille 2008). The goal of this paper is to focus on how a President (and his communications team) manages to shape a certain number of representations on the public's mental screen via rhetorical tools and broader linguistic devices.

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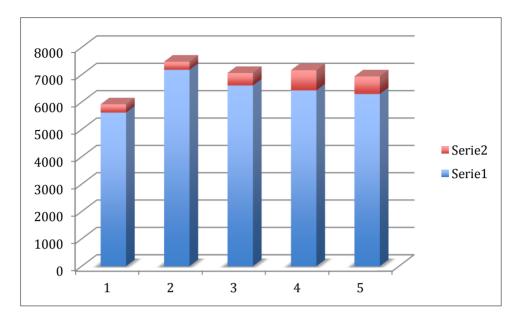
The power of rhetoric in day-to-day life, as well as the importance of the investigation about to be conducted, are nicely illustrated by Caillois in *Art Poétique* (1958) where he tells that once upon a time, there was a blind beggar on the Brooklyn Bridge. He wore a sign that read: "blind from birth". One day, a passer by stopped and asked him how much money he usually received by the end of a day: "\$2" replied the beggar. The passer by took the sign, wrote a new message on the back and returned it to the beggar. One month later, the passer by came back and asked the beggar whether he had eventually collected more money. The beggar answered positively and did not know how to thank the passer by. "But what's the sentence that you wrote?" he then asked. "Oh, it's very simple", said the passer by, "It says: 'Springtime is coming and I won't see it'".

If we allow ourselves a rapid comparison of the two utterances, which was not operated by Caillois, "Blind from birth" states a fact in a highly informative and literal manner. The message goes straight to the point and therefore tries to be as efficient as possible in order to catch the passer-by's attention. It may almost be perceived as blunt or even aggressive. Whereas the new message, "Springtime is coming and I won't see it", makes surface at least four parameters in the receiver's mind: (i) context (springtime), (ii) identification process (what if  $\underline{L}$  could no see springtime?) (iii) figurative language as springtime is personified (which potentially softens the message via a poetic image) and (iv) (related to (ii)) informative gaps to be filled which thus activate intersubjectivity and pathos.

# 2. Statistics

As was the case in President Bush's S.O.T.U.As, there isn't one part explicitly dedicated to climate change *per se*. The theme of energy constitutes the entrance door, so to say, to the climate change issue, and not the other way round i.e. from observations regarding climate change to energy policies. The main link which easily connects the two are the adjectives "clean" and "renewable", which often qualify the noun "energy". It should be emphasized that this type of corpus can only be obtained manually, and not via quantitative methods.

The following diagram takes into account the number of words pronounced in each S.O.T.U.A. within which a portion, in red, indicates the number of words dedicated to energy and environmental policies. To say that it is an exercise in style over substance is perhaps an overstatement, as it would suggest that there isn't any substance. Yet, these passages are rather limited as they amount to 4 to 10 % of the total of words per speech. The day the 2013 S.O.T.U.A. was delivered, most media stated that Obama, this time, had centered an important portion of his speech on climate change. The figures clearly tell otherwise. Retrospectively, we may posit that this interpretation was created thanks to a selection of excerpts that were duplicated *ad infinitum* online, on TV, in the press, etc. It is worth underlining that the portions dedicated to these issues in G.W. Bush's eight speeches oscillated from 0% in 2002 (where 70% of the S.O.T.U.A. was centered on the War on Terror program while the environmental issues at hand were solely referred to by the phrase "a cleaner environment") to 4–5% in the other speeches, with an exception of 7.8% in 2007.



The diagram explicitly shows that in 2009, 5% of the total number of words was dedicated to energy and the environment, 4 % in 2010, 6.5 % in 2011, 10.3 % in 2012 and 9.3 % in 2013.

2012 corresponds to the S.O.T.U.A. of election year over which environmentalists and eco-friendly voters needed to be addressed. The amount of words for the first three speeches (2009–2011) varies little even though BP oil spill occurred in April 2010. For the sake of argumentation, I will come back on the context of 2013 at the end of the paper.

Energy and climate change are far from being at the heart of these five speeches. One major reason that accounts for this observation has, of course, to do with the economic crisis. New expressions such as "half homeless people", "motel kids" or "unbanked" Americans" reflect the harsh reality the U.S.A. currently finds itself in although the recession is said to now be over.<sup>1</sup>

# 3. Cognitive rhetoric

Since Bonnefille 2008, we have been using the expression "cognitive rhetoric" to refer to the blending of a sophistic definition of rhetoric – namely the speaker's art of persuasion as defined by Aristotle – and cognitive linguistics as defined in the 1980s by, among other scholars, Lakoff and Johnson (1980), Sweetser (1990), Fillmore (1976, 1985), Gibbs (1994), Turner and Fauconnier (2002), Gentner (1983), Talmy (2000). Instead of looking at metaphors, metonymies, analogies and tropes in general as a taxonomy of rhetorical tools, we call upon the research conducted in cognitive linguistics so as to

<sup>&</sup>lt;sup>1</sup> The Economist, Feb 2013. 1 in 12 American citizens has no bank account.

integrate the cognitive dimension triggered in the receiver's mind by the speaker's activation of such mechanisms. We also bridge the concept of storytelling (Poletta 2006; Salmon 2008) to that of rhetoric to demonstrate how central very simple templates of stories are projected onto a logos. By storytelling, we need to remember that it is not always a story in its more basic sense that is projected, but rather partial mechanisms of narratives which enable the hearer to get a sense of cohesiveness and logic, be the items explicitly or implicitly connected to each other. From Homer to Shakespeare (Salmon 2008: 16), stories were told to transmit universal myths, morals, traditions, knowledge, ways of behaving under given circumstances in order that wisdom could be reached. However, Salmon states that storytelling goes the opposite direction: artificial stories are brutally projected onto reality and thus firmly orient the audience's mind towards a controlled process of conceptualization. In return, the audience ends up identifying itself with this artificial highly basic narrative. As quoted by Poletta (2006: 7), according to Carville (the lead strategist who helped Clinton win), the Democrats lost the 2004 election because they did not have a good story:

They (Republicans) produce a narrative, we (Democrats) produce a litany. They say, 'I'm going to protect you from the terrorists in Tehran and the homos in Hollywood'. We say, 'we're for clean air, better schools, more health care'. And so there's a Republican narrative, a story, and there's a Democratic litany.<sup>2</sup>

The main ingredients are a cast of characters, a plot, a beginning, a middle, a potential ending (happy or not), potential episodes, most of the time a frame which governs a set of conceptual metaphors, metonymies, analogies, similes (war frame, illness frame, etc.). More generally, we therefore support Talmy's hypothesis regarding the existence of a narrative cognitive system (2000: 419):

We posit that the mental faculty for the generation and experiencing of broadly construed narrative constitutes a specific cognitive system in its own right. This narrative cognitive system would generally function to connect and integrate certain components of conscious content over time into a coherent ideational structure.

In the following piece of research, the speaker's intention of communication (in Grice's sense, Schiffrin 1994: 190–228), as well as a precise definition of who the receiver is will need to be defined. The extra verbal context against which the speech is delivered will be taken into account as much as possible. Likewise, the expectations on the part of the receiver, who is anchored within this specific context, will have to be investigated.

# 4. Energy, climate change, pollution and melodrama in President G.W. Bush's S.O.T.U.As and in some of Obama's speeches

In his essay "Environmental Melodrama", Schwarze (2006) states that most examples of environmental rhetoric that express public controversies, largely put, are often structured

<sup>&</sup>lt;sup>2</sup> which isn't, by definition, a narrative.

by a melodramatic genre (or "frame").<sup>3</sup> He underlines (2006: 243–44) that melodrama should not be mistaken for tragedy, as tragedy "focuses on conflicts *within* the individuals whereas melodrama and comedy are staged around conflicts *between* individuals and some external opponent." More simply put: "In tragedy the bad guy is *within*", "in melodrama the bad guy is *external*". Schwarze (2006: 255) also emphasizes the fact that melodrama is often used when there already exists a strong diversion in public opinion. And this is precisely then that it gains rhetorical power:

When bonds are strong, melodramatic rhetoric may do little more than reinforce existing identities and perspectives on a controversy; but when audiences are encouraged to empathize with unknown or far–flung victims, there is a much greater possibility for transformed perceptions of public problems.

In Bush's S.O.T.U.As, energy crisis was conceptualized by what we defined as the dependence frame. Looking back at this piece of research through Schwarze's article, we can now see how melodrama was called upon as a rhetorical tool in those passages. As will be discussed, this frame is no longer present in Obama's Addresses. Yet, for the sake of contrast, we shall travel backward and summarize the main findings that were discussed in Bonnefille 2008.

## 4.1 On energy: Exit the dependence frame

One recurrent metaphor that was first activated in Bush's S.O.T.U.As was that of dependence on foreign oil, especially after the 9/11 terrorist attacks which lead to the War on Terror program and where the Middle East became the main protagonist to keep at a distance. This notion of dependence was gradually replaced by the more telling "addiction to oil" metaphor. Based on the metaphorical expressions found in Bush's S.O.T.U.As (Bonnefille 2008), the numerous conceptual cross–domain mappings of this metaphor, which made the narrative framing surface, were defined as follows:

OIL IS A DRUG ADDICTION TO OIL IS A SERIOUS ILLNESS THE U.S.A. IS A DRUG ADDICT THE U.S.A. IS A PATIENT/ THE VICTIM O.P.E.C. IS A DRUG DEALER/ THE VILLAIN AMERICA'S ECONOMY IS THE DRUG ADDICT'S HEALTH IMPORTING MORE OIL IS RISKING THE DRUG ADDICT'S LIFE COSUMING OIL IS DOING DRUGS THE U.S.A. IS WEAK/ LOST ITS FREE WILL THE OIL COMPANIES ARE THE MAFIA

<sup>&</sup>lt;sup>3</sup> The author wishes to thank Steve Schwarze for his kind help and advice at UMT, in June 2013 on this part of the argumentation. Schwarze uses the notion of « frame » in a way that will not be discussed here. It is however important to underline that we will use it as defined by Fillmore and Lakoff.

# THE PRESIDENT AND HIS ADMINISTRATION ARE THE DOCTORS/THE SAVIOR THE U.S.A. NEEDS TO GO TO REHABILITATION

Surprisingly, this narrative framing was reexploited by Obama over his first presidential campaign (Bonnefille, 2009). Candidate Mc Cain wanted to increase importation so as to reduce this state of dependence. Yet, the latter was never conceptualized as an addiction. However, Obama's speech aids decided to reactivate this rather brutal metaphor of addiction so that it would trigger a radical violent image of the situation that lay ahead in the citizens' minds. Here are some excerpts found in a series of Obama's selected speech delivered during the summer of 2008:

We become more addicted to oil; to beg Saudi Arabia for more oil; increase our oil addiction; reduce our dependence on foreign oil; begging dictators for more oil; we can't shake (our) addiction to oil; to free America from this dependence; breaking our oil addiction...

This choice of melodramatic frame appealed to the American citizens' pathos regarding the political danger of depending on foreign energy, especially when imported from the Middle East. The power of personification combined to a serious health condition allowed the hearers to compute on a much smaller scale, i.e. from countries to people and from global geostrategy to illness, and thus brought the complex problematic of energy in the U.S.A. closer to home while obliterating highly complex aspects of global economical strategies.

# 4.2 On climate change: From clean to cleanup

In Bush's eight speeches, the phrase "global warming" was not used once and "climate change" was only mentioned twice in 2007 and in 2008 (Bonnefille 2008). The word "environment" (which appears 13 times over the eight speeches, while "energy" surfaces 38 times), is often accompanied by the notions of protection and cleanliness:

2001 and 2002: "a cleaner environment"
2003: "cleaner technology" "cleaner air"
2005: "safe, clean nuclear energy, clean coal"
2006: "cleaner, cheaper, and more reliable alternative energy sources"; "cleanenergy research"
2007: "keep America's environment clean", "clean coal", "clean, safe nuclear power", "clean diesel"
2008: "clean technology", "clean energy sources", "cleaner technology"

As said, the adjective "clean" activates a conceptual network of knowledge, which includes purity, freshness, hygiene and safety. As Lakoff (2004: 22–23) states:

People who support environmentalist positions like certain words. They like the words "healthy", "clean", and "safe" because these words fit frames that describe what the environment means to them.

Yet, clean coal, clean nuclear plant and clean diesel might be considered as misuse of language as these belong to the fossil type of energy which, by definition, cannot be considered as "green" and as harmless, and therefore as "clean", for the environment. More to the point, we posited that this communication strategy is part of a greenwashing process.

President G.W. Bush's eight speeches never pictured climate change as an enemy to be fought, probably because from 2002 onwards the war frame was already called upon so as to structure the War on Terror program. Neither did candidate Obama's during his first presidential campaign. For him as well as for Mc Cain, environmental issues came after what, at the time (Summer 2008), was considered the number one priority: "energy crisis".

But when President Obama delivered his speech at the U.N.'s Climate change summit in 2009 (Bonnefille 2012), the activation of an apocalyptic tale created a dramatic effect, which was almost immediately counterbalanced by the setting up of what we then called the rescue narrative. Mother Nature was presented as spiraling out of control. And the list of solutions presented in the next paragraphs operated a sharp contrast and created an immediate feeling of reassurance and safety. This process is close to what is known, in everyday language, as "emotional roller coaster". When addressing climate change issues, Obama pronounced phrases such as: "a global fight against climate change", "a combat", "a challenge", "a global commitment" "a threat", etc.

Now it is interesting to note that when the 2010 BP oil spill occurred (Bonnefille 2013), the war frame – that had been lurking in the background until then, as shown with the selected aforementioned phrases – was explicitly activated throughout Obama's oval office speech so as to make the citizens conceptualize what the task at hand, the "cleanup operation", consisted of. The fact that this environmental catastrophe was directly human induced, as opposed to the fluctuating responsibility to be endorsed by human beings regarding climate change, gave the possibility to frame the situation from the war angle and therefore to convey a feeling of control and safety to be reached. The enemy was the spill and its side effects. And this is how Obama detailed, for 20 minutes on end, what the Administration's "battle plan" would consist of. Not surprisingly, this framing process included an enemy, victims and a savior, and a strategy divided into three main clear–cut steps.

# 5. President Obama's S.O.T.U.As: Conceptualization of climate change

In the five passages investigated, the mechanisms of melodrama are simply not activated, as there no longer seems to be any kind of controversy regarding either climate change, which is rarely referred to by Obama, or energy. The need to invest in the research and production of renewable and clean energies is recurrently emphasized in

these passages. However, the notion of energy crisis, which was structured by melodrama over Obama's first presidential campaign, is no longer topical as if it had never existed in the first place. In other words: exit energy crisis.

The expression "global warming" is not used once and seems to have been dropped for good in the American political arena. Obama refers to "climate change" once in 2009, 2010, 2012 and three times in 2013. It is not mention once in 2011. In 2010, he goes as far as implicitly referring to the Climategate<sup>4</sup> and therefore chooses to address the skeptics:

I know there are those who disagree with the overwhelming scientific evidence on climate change.

Of course, one could argue that the expression "climate change" has a more general scope and thus can include tornadoes, tsunamis, etc. Nonetheless it still rings as an understatement, as a "change" in itself does not necessarily imply dramatic consequences, whereas "global warming" clearly refers to the danger implied by carbon emission for our planet. In Bonnefille 2012, we underlined that whereas Obama talked about "climate change", Sarkozy referred to the phenomenon via the more dramatic phrase "global warming". We posited that, quite obviously, "climate change" takes the heat out of the debate by presenting the issue as less catastrophic and by alleviating the guilt prompted by the expression "global warming", which often implies that the causes are predominantly human induced. Even though climate change and energy issues are intertwined, the passages under study predominantly deal with energy issue in the first place. And, once more, the connection between the two domains is obtained via the use of the notion of cleanliness. The main idea regarding "climate change" is that – when mentioned – it is conceptualized as a fight or a rescue plan:

2009: (...) save our planet from the ravages of climate change (...)

2012: (...) to pass a comprehensive plan to fight climate change (...)

2013: But for the sake of our children and our future, we must do more to combat climate change (...)

# 6. President Obama's S.O.T.U.As: Conceptualization of energy issues

This section gives a chronological overview of the passages extracted from the 5 S.O.T.U.As so as to "put the loose ends together" and get a more general picture of the mechanisms at work.

#### 6.1. 2009

From 2009, renewable energy is presented as a contest that needs to be won. And President Obama reminds Congress and the American citizens that the U.S.A. has fallen behind China, Germany, Japan and Korea:

<sup>&</sup>lt;sup>4</sup> http://www.guardian.co.uk/environment/2010/jul/07/climate-emails-question-answer

We know the country that harnesses the power of clean, renewable energy will lead the 21st century. (...) Well I do not accept a future where the jobs and industries of tomorrow take root beyond our borders – and I know you don't either. It is time for America to lead again.

The power of this energy is conceptualized as an animal that needs to be controlled by man, or rather as a horse harnessed by a cowboy. The vegetable metaphor induced by the verbal expression "take root" triggers the image of a plant that could grow bigger and expand if not uprooted rapidly. Hence, industries and jobs are plants, which need to be cultivated on the American soil. It is important to underline that clean and renewable energies correspond to two different categories. However, here, they seem to be one and the same. And this simplification can then mislead people in thinking that biomass and biofuel are renewable, when the latter may imply deforestation. The tone used in the passage is not that of encouragement but clearly that of emulation and authority:

I do not accept/ and I know you don't either/it is time/So I ask this Congress to send me legislation/right here in America

Congress is openly asked to send a legislation that will increase the production of renewable energy via innovation. The conative function used to refer (i) to the Congress's responsibility in that area and (ii) to the citizens' will via the use of the pronoun "you" brings closer together the speaker and the addressees. They are then reunited in the personification "It is time for America to lead again". The modal "will" expresses a sense of futurity as well as the will to act (*willan*), therefore activating the two meanings of the modal auxiliary: it is going to happen in the future and I want this to happen now. Very often, Obama associates the concepts of economy, security and climate change. Even if we may easily grasp how these notions are intertwined in the so–called extra–verbal world, the effect created by such a juxtaposition is that of a security discourse on the national political scene.

#### 6.2. 2010

In 2010, innovation and creation are the key concepts used to refer to environmental and energy policies, henceforth conveniently bridging the two:

-And no area is more ripe for such innovation that energy. You can see the results of last year's investments in clean energy.

-But to create more of these clean energy jobs, we need more production, more efficiency, more incentives. And that means building a new generation of safe, clean nuclear plants in our country. It means (...) It means (...). And, yes, it means (...)

The comparative form of superiority, as repeated three times, again plays on the emulation string. The ternary rhythm is kept in the following statements so that it energizes the speech, the tempo is moving forward confidently, the way a steam engine would "it means, it means, and yes it means". The expression "clean energy" changes parts of speech so that, from being a noun phrase, it becomes an adjective which defines a whole new category of jobs, rather loosely as it were: "clean energy jobs". Again the

vegetable metaphor surfaces with the adjective "ripe" that turns the area of investment, energy, into a piece of fruit which should now be picked before it becomes overripe. In this passage, even climate change skeptics are addressed:

-I know there are those who disagree with the overwhelming scientific evidence on climate change. But here's the thing – even if you doubt the evidence (...)– because the nation that leads the clean energy economy will be the nation that leads the global economy. And America must be that nation.

And, surprisingly, instead of trying to convince them of the reality of this "change", President Obama finds them an incentive so that they too go with the clean energy flow i.e. money:

The nation that leads the clean energy economy will be the nation that leads the global economy.

Again, "clean energy" is used as an adjective to define a brand new kind of energy the way it defined a brand new kind of jobs. Nonetheless, specifics and quantity regarding those two are still a little foggy. The register used can sometimes catch the addressee off guard, as it can be downright casual: "But here's the thing". Generally speaking, the register used in these speeches is becoming less and less formal and get closer and closer to what is broadly referred to as "consultative" (although that would mean a two–way communication channel) and "casual" registers. In other words, this register rests on a "group" language shared by a certain group of members or, more appropriately, by buddies. This strategy naturally aims at establishing an intimate relationship with the people addressed to and to generate a feeling of connivance.

### 6.3. 2011

The notion of investment in clean energy technology, although we don't know which types of energy are referred to, is also central in the 2011 passage. And Obama justifies the need to invest in that area as such:

 $(\ldots)$  an investment that will strengthen our security, protect our planet, and create countless new jobs for our people.

Once more, the concepts of security of the nation and protection of the planet are juxtaposed and play on a double entendre: if the nation invests in clean energy, it reinforces its inland security and also plays a part in protecting the planet. One may wonder to what extent the 9/11 terrorist attacks are indirectly hinted at. As for the notion of protection, why connect it to the planet and not just to the environment? This implicit opposition between the U.S.A. and the planet makes the speech operate on a big scale, if not the biggest. Renewable energy is described as "a promise" with can be achieved if the Americans once more "reinvent (themselves)":

 $(\ldots)$  we've begun to reinvent our energy policy. We're not just handing out money. We're issuing a challenge.

The closeness in sound between "invest" and "invent" is worth underlining as it reinforces the dimension of creativity that Obama appeals to. The terms "Innovation", "breakthroughs", "setting a new goal" belong to the same semantic field of creation. To make the project even more attractive, it is described as a "challenge". The tone of emulation, as well as a patriotic coloring, is therefore still part of the discourse strategy:

Maintaining our leadership is crucial to America's success. But if we want to win the future  $(\ldots)$ 

#### 6.4. 2012

Out of the five speeches, the 2012 S.O.T.U.A. contains the longest part dedicated to energy. This is precisely when Obama starts strengthening his position towards energy independence, even though the phrase is not pronounced as such:

And nowhere is the promise of innovation greater than in America-made energy. Right now-right now- American oil production is the highest that's it's been in eight years. That's right – eight years. Not only that –last year, we relied less on foreign oil than in any of the past 16 years.

One important feature of this passage could be defined as a mixture of (i) what has already been done, concretely, regarding the field of energy and (ii) what is on the verge of being accomplished, in a to-do list format. In a down-to-earth approach, periods of time and quantities are frequently referred to, hence studding the passage with numerous figures:

– Over the last three years, we've opened millions of new acres for oil and gas exploration, and tonight I'm directing my administration to open more than 75 percent of our potential offshore oil and gas resources.

- We have a supply that can last America nearly 100 years. And my administration will take every possible action to safely develop this energy. Experts believe this will support more than 600, 000 jobs by the end of the decade.

- So far you (Congress) haven't acted. Well, tonight, I will.

Another important aspect of the speech is, once more, the overuse of the notion of cleanliness as associated to the exploitation of energy, broadly put:

As strategy that's cleaner; will create jobs and power trucks and factories that are cleaner; clean energy; clean energy industry; pass clean energy tax credits; a clean energy standard; development of clean energy; the largest commitments to clean energy in history

Cleanliness and safety often work hand in hand in the activated process of conceptualization i.e. not only is everything regarding energy "clean" but it also is "safe" for the citizens and for the country, whatever the scope of the notion of safety covers.

#### 6.5. 2013

The 2013 passage, although much shorter, contains the exact same features: figures for periods of time and quantity (of money, of jobs, etc.), the semantic field of promise

(reinvention, challenge, etc.), the notion of safety (for the citizens, for "our" children). "Climate change" is pronounced three times, which actually is why so many people had the impression that, this time, Obama really had centered a part of his S.O.T.U.A. on environmental issues:

- We must do more to combat climate change (...)
- -(...) market–based solution to climate change (...)
- -(...) prepare our communities for the consequences of climate change (...)

Another way for Obama to make what he refers to as "new energies" attractive is their cost: they're always described as being cheaper and as enabling the citizens to actually reduce their energy bills. It would only take a couple of engineers to demonstrate that renewable energies such as wind power, clean energies such as biomass and new technologies such as shale oil drilling systematically imply serious financial investment. Energy, by definition, can never be cheap. Out of the five S.O.T.U.As, 2013 is the year where the "energy independence" concept is referred to in an upbeat and confident style:

(...) the natural gas boom has led to cleaner power and greater energy independence. We need to encourage that. And that's why my administration will keep cutting red tape and speeding up new oil and gas permits.

And, naturally, the adjective "clean" is overexploited and very often used in its comparative form of superiority, which implies that not only is the area of energy, very broadly put, "clean", but it is even "cleaner". Now, for the seasoned cognizer to reach a syntactic balance and a certain conceptual reality, he would actually need to have access to the other part of the syntactic and conceptual comparative form: cleaner than what?

# 7. The rhetorical power of analogical reasoning

"This is our generation's Sputnik moment" is how the part on energy starts in 2011. This utterance corresponds to what Gardes Tamines (1996: 39) defines as "a universal memory image", because it triggers specific shared knowledge regarding, in this case, the history of the country. Paradoxically, Sputnik refers to a missed golden opportunity as Sputnik was the first artificial earth satellite launched in 1957 by the Soviet Union. Hence, although "universal memory image" when connected to the history of the country generally develops patriotism –as a reference to Appollo 11 would– the adopted strategy is more subtle here. At first glance, we could define this utterance as metaphoric since it seems that a link of resemblance is established between A (the deictic in its cataphoric use) and B ("our generation's Sputnik moment") via the copula BE. Yet, we should remember that according to Gentner (1983), what is predominant in the working process of analogical reasoning is not the similarity between source and target but the relational structure that can be projected from source onto target. This is precisely the case here. More broadly, Vosniadou and Ortony state (1989: 7):

Analogical reasoning involves the transfer of relational information from a domain that already exists in memory (source domain) to the domain to be explained (target). Similarity is implicated in this process because a successful, useful analogy depends upon there being some sort of similarity between the source domain and the target domain because the perception of similarity is likely to play a major role in some of the key processes associated with analogical reasoning.

What is at stake, discourse wise, is a once-in-a-lifetime opportunity in the field of new energies that needs to be seized. And if -according to Obama- the U.S.A. achieves this goal, then the country will be in a analogous situation as the U.S.S.R. was when it launched the first satellite before anybody else, namely: the first, the best, the leader, the winner. The analogy, although a little cryptic for the younger generation, is yet another way to trigger a sense of emulation and patriotism. The President emphasizes that admittedly the U.S.A. missed the Sputnik golden opportunity but that, today, the country is ready to win this new global go-green race, i.e. end up first. And to strengthen the impact of the trope, the passage ends on another aspect of the analogy: "(...) we'll fund the Apollo projects of our time." Once again, analogy enables the President to make the citizens and Congress conceptualize the scientific innovation in the field of new energies in terms of the competition for supremacy in space exploration. In other words, that ship has not sailed yet. We may, however, ask ourselves what should be thought of the dormant aspect of the analogy: the now long buried Cold War context against which the Space Race took place.

# 8. Obama on energy: A success story in the making

Although there is an underlying structure common to the five parts under study, there isn't any chronological evolution over the five excerpts but just a constant use of the same conceptual metaphors and scenario from 2009 to 2013. The scenario in question is not an elaborate narrative structure with episodes and a plot. Yet, a storytelling process can be highlighted. Obama actually spins energy policy in a way that we choose to call the model of a success story, for the purpose of this publication. As broadly defined, the notion of "success story" refers to the account of a person, usually poor, who succeeds in reaching a new level of social and economic way of life. The main character is a hard worker, often due to his social background that encourages him on the path of social revenge. With the help of personification and metonymic contiguity, the scenario is extended to the U.S.A., and hence generates a network of metaphorical entailments (activated or dormant). Energy issues, since the concern of an energy crisis is no longer resonating, are transformed into a challenge that will feed on invention, reinvention and creation. Many examples of technological research and advance are used to illustrate this key notion of creation. Hence the main following recurrent conceptual metaphors, combined to analogies such as the one we focused on, are used to frame the whole energy discourse this specific way and thus give those S.O.T.U.As a sense of cohesiveness and persuasion:

PRODUCING NEW ENERGY IS A RACE / A CHALLENGE THE U.S.A. WAS A WORLD LEADER & THE OTHER COUNTRIES WERE FOLLOWERS OTHER COUNTRIES ARE FIRST NOW THE U.S.A. HAS A PERSONALITY TO BE A WINNER AGAIN, THE U.S.A. NEEDS TO REINVENT ITSELF TIME IS AN OBJECT / THE FUTURE IS A GOLDEN MEDAL TO ACHIEVE SUFFICIENT ENERGY PRODUCTION IS TO WIN THE FUTURE PROMISE IS A LOCATION CLEAN ENERGY IS A PROMISE ENERGY SHORTAGE IS AN ILLNESS THE AVAILABLE AMOUNT OF ENERGY IS THE U.S.A.'S HEALTH THE U.S.A. COULD RISK ITS HEALTH TO DOUBLE THE NATION'S SUPPLY IS TO ESTABLISH A RECOVERY PLAN

As was the case in Bush's S.O.T.U.As, the adjective "clean" is used in Obama's S.O.T.U.As to define a brand new kind of energy as well as a brand new kind of jobs. Nonetheless, specifics and quantity regarding those clean energies and those clean jobs are still foggy as oil, natural gas and shale gas, coal and clean coal, wind and solar, nuclear power are all put on the same plane and subsumed under the generic term "energy". Hence, the adjectives "clean" and "new" create a greenwashed subcategory, which nicely bridges production of energy on the one hand with eco–friendly environmental policy on the other.

The emulation associated to this notion of discovery and conquest activates the old myth of the pioneers. The mid–19<sup>th</sup> century "Go West, young man" motto is nowadays replaced by "Go Green"<sup>5</sup> and, to some extent, Obama's rhetoric of energy independence spun as a success story is similar to the rhetoric of Manifest Destiny which generated the largest acquisition of U.S. territory in the 19<sup>th</sup> century.

The Addiction to oil metaphor and the illness frame (that could definitely qualify for melodrama) used to refer to the American dependence on foreign oil –and originally coined by President Bush after 9/11 and reexploited by Obama during his first presidential campaign– are ancient history. One of the reasons they were given up has to do with the brutality these tropes convey and the metaphorical entailments they could trigger in the citizens' minds. Picturing a country as a drug addict when it is experiencing an economic crisis could be a very bad move communications wise.<sup>6</sup> The domestic price of energy also plays an important role as connected to the background context. It dropped sharply these past years, alleviating the American citizens' pain at the pump. One should bear in mind that over President Bush's second term, the price of oil had increased to such a point that Obama decided to focus part of his campaign on the then so–called energy crisis. Now, do new perspectives in the area of energy exploitation in the United States equate with a vanishing energy crisis? Does the fact that fossil energies will remain dominant until 2035 equate with a "cleaner and safer"

<sup>&</sup>lt;sup>5</sup> We would like to thank our colleague Antoine Ertlé for this very helpful rephrasing.

<sup>&</sup>lt;sup>6</sup> http://www.tv5.org/cms/chaine-francophone/info/Les-dossiers-de-la-redaction/Economie-Monde-2013/p-24007-Economie-en-2013-faut-il-etre-optimiste-ou-pessimiste-.htm

environment<sup>7</sup>? And where does a potential rethinking of global energy consumption fit in, if at all?

# 9. Speaker and Receiver: Who's talking to Whom?

In the Gricean view of communication, the speaker does not convey thoughts to the recipient, but intentions. And the recipient acts as a mirror-image of the speaker. The main goal is to achieve intersubjectivity. And to do so, not only the code (i.e. the lexicon and the grammar, to put it simply) is called for, but also what is referred to as "general principles of communication" (Schiffrin 1994: 393–405). We shall tentatively rephrase this expression by championing that the so-called code actually needs to be associated to rhetorical processes. For intersubjectivity to take place, the recipient needs to recognize the speaker's intentions. As a matter of fact, three intentions are generally said to be involved in this inferential model of communication:

- a) S's utterance of x produces a certain response r in a certain audience A
- b) A recognizes S's intention a)
- c) A's recognition of S's intention a) functions as, at least, part of A's reason for A's response r.

The reponse "r" encompasses belief, hope, emulation, investment, etc. Although we posited that interpersonal solidarity and emulation are definitely "recognizable" in the corpus, reservations could be made as to whether the intention Obama wants to achieve can systematically be retrieved by the audience. If the targeted audience is the Congress, then Obama's intention probably is retrievable.<sup>8</sup> Yet if the audience that is addressed corresponds to the American citizens, then no intention beyond that of creating a sense of unity and emulation through common history, beliefs, myths can be perceived as most of the audience, quite logically, does not have any tangible notion regarding the complex reality of the energy context. Reality can thus easily be shaped according to misrepresentations and, oftentimes, according to lies by omission, as goes the expression in French.

This notion of expectation leads us to one final question: who is the President talking to? After several readings of the five passages, a feeling of cacophony may be experienced. We therefore asked a scholar in cognitive poetics, Arnaud Schmitt, to examine more closely this juxtaposition of utterances. Our colleague almost right away detected that not one, not two but at least three different receivers could be identified: Congress, the American citizens and the American collective unconscious (as demonstrated in the section dedicated to analogical reasoning, for instance). And that definitely explains, from a linguistics standpoint, the constant change of register and the sense of chaos it can lead to. As in:

<sup>&</sup>lt;sup>7</sup> See *The New York Times*, April 24 2013, « By 2023, a changed world in energy » http://www.nytimes.com/2013/04/25/business/energy–environment/by–2023–a–changed–world–in–energy.html?pagewanted=all&\_r=0

<sup>&</sup>lt;sup>8</sup> He shall from time to time give to the Congress information of the State of the Union, and recommend to their consideration such measures as he shall judge necessary and expedient (...) Constitution, Art. 2, section 3

(2011) We need to get behind this innovation. And to help pay for it, I'm asking Congress to eliminate the billions in taxpayer dollars we currently give to oil companies. I don't know if you've noticed, but they're doing just fine on their own. So instead subsidizing energy, let's invest in tomorrow's.

The cohesiveness of these parts is not obtained via a complex underlying narrative structure but by a technique of cut and paste. Obama is talking to Congress, as a president always is supposed to during a S.O.T.U.A.. But he is also, and more predominantly, addressing the citizens (and investors) to reassure them:

(2009) But to truly transform our economy, protect our security, and save our planet from the ravages of climate change, we need to ultimately make clean, renewable energy the profitable kind of energy. So I ask this Congress to send me legislation that places a market–based cap on carbon pollution and drives the production of more renewable energy in America.

As seen in section 6.2., the register can get very close to that of a "group" language i.e. highly casual. As in:

(2012) When Bryan Ritterby was laid off from his job making furniture, he said he worried that at 55, no one would give him a second chance. But he found work at Energetx, a wind turbine manufacturer in Michigan (...) Today (the factory) is hiring workers like Bryan, who said, "I'm proud to be working in the industry of the future. (...) But I will not walk away from the promise of clean energy. I will not walk away from workers like Bryan.

This strategy of reduction of scale (from clean energy, to workers, to Bryan) and the instrumental use of an individual's name, enables the citizens to empathize with this character's job experience. This part, among others, is clearly not directed at the Congress. More generally, this strategy naturally aims at establishing an intimate relationship with the people addressed to and to generate a feeling of connivance. As a matter of fact, for this last S.O.T.U.A., the White House enabled the public to participate via the use of numerous government–created online and mobile tools, which corresponds, in the aforementioned diagram, to A's "r" possible response. These communication techniques, which are used to address several types of audiences at the same time in a speech, are also known as "dog whistlers" in the field of journalism. Hence this feeling of cacophony is not perceived as such if the bigger picture is not taken into account. In terms of communication, these speeches clearly are multi–layered and appeal to this or that type of audience every now and then, while not being of interest or even fully intelligible at other times. It is when one wants to get the full picture, so to speak, that a sense of disconnection close to that of cognitive dissonance may surface.

# 10. Concluding remarks

By using this multi-faceted message in the S.O.T.U.A. passages dedicated to energy and environmental communication in order to reach at least three distinct targets, Obama manages to address the collective unconscious via collective representations underlain by the pioneer myth. We saw that, among other tropes, analogical reasoning is key tool to rhetoric and takes part in the framing process. As a matter of fact, the Space Race, the Cold War, 9/11 are never far off.

Over the past years in the U.S.A., the discovery of shale gas and oil has lead to a significant alteration regarding the issue of energy<sup>9</sup>. The gloomy energy crisis perspective got gradually replaced by a regained sense of hope, with a climax that surfaced in 2013 S.O.T.U.A.: "We're finally poised to control our energy future", claimed the President.

Yet, many official sources state that (i) the estimation of resources is being seriously overestimated and that (ii) the exploitation of such energy is much more expensive than expected. Gas prices have fallen sharply these past years due to the increase of domestic production. Yet, a year ago, Mr Tillerson, Exxon Mobil CEO (the largest producer of natural gas in the U.S.A. since 2010) stated before the Council on Foreign Relations in June 2012 and while, at the same time, lying to the investors: "We are losing our shirts. We're making no money. It's all in the red."<sup>10</sup>

We hinted at Greenwash processes several times in our article, underlining that the notion of cleanliness was used to bridge energy exploitation with eco–friendly position. Hence, if issuing offshore permits is encouraged, the BP oil spill, which occurred in 2010, is not mentioned once. Neither is the Gulf Coast "cleanup operation", nor its limitations, that has been going on since then (Bonnefille 2013). Events such as the controversy regarding the XL keystone pipeline route<sup>11</sup>, as well as the serious spill which occurred on the Yellowstone pipeline in 2011<sup>12</sup>, are totally obliterated. And this comes as no surprise as the aim of such a speech is to be persuasive, not to display the potential dangers the U.S.A. is exposing itself to.

Studying those speeches from the angle of rhetoric and cognitive linguistics enabled us to investigate the conceptualization mechanisms at work which have shaped one single consistent political position over five years, at least in the five S.O.T.U.A.s. We posited that this success story turns out to be a revamped version of the myth of the pioneer. It is partially based on inaccurate assumptions, incorrect scientific data and costs, which lead to wrong figures and overstated expectations regarding potential exploitation and, therefore, regarding also the reality of what Obama presents as a clean and safe energy independence. The discrepancy that exists between rhetoric and reality is nothing new under the sun. However, as a linguist, we deem it necessary to focus on this ever–growing type of energy and environmental communication so as to unveil the recurrent denominators that make people conceptualize the issue the way they do. Or as Sperber (1975) would put it:

"It is the job of rhetoric to explain how, on the basis of a fragment of a conceptual representation, the hearer manages to reconstruct the complete representation, and how the speaker can feel certain that the hearer will do so."

<sup>&</sup>lt;sup>9</sup> http://www.doi.gov/news/pressreleases/usgs-releases-new-oil-and-gas-assessment-forbakken-and-three-forks-formations.cfm

<sup>&</sup>lt;sup>10</sup> http://online.wsj.com/article/SB10001424052702303561504577492501026260464.html

<sup>&</sup>lt;sup>11</sup> http://www.nytimes.com/2013/06/27/business/energy-environment/in-canada-pipelineremarks-stir-analysis.html

<sup>&</sup>lt;sup>12</sup> http://www.nytimes.com/2011/07/03/us/03oilspill.html?\_r=0

### **References 1**

Aristote (1997). Poétique. Paris: Mille et une nuits.

- Aristote (1991). Rhétorique. Paris: Le Livre de poche.
- Bonnefille, Stéphanie (2013). "A cognitive linguistics approach to the rhetoric of damage control: BP's oil spill and the EPA's strategy of communication". *Entrepalavras, vol. 3, n° 1 (3),* Fortaleza.

http://www.entrepalavras.ufc.br/revista/index.php/Revista/article/view/183

- Bonnefille, Stéphanie (2012). "Obama's and Sarkozy's remarks at the U.N.'s Climate Change Summit: a contest between figurative and literal language?". In B. Lewandowska–Tomaszczyk (Ed.), *Texts and Minds. Papers in Cognitive Poetics and Rhetoric* (225–242). Frankfurt am Main: Peter Lang.
- Bonnefille, Stéphanie (2009). "Conceptualisation de la question environnemtale aux Etats-Unis: les mots verts des candidats Obama et McCain". *Bulletin de la Société Anglaise 31* (30-48). Paris: Paris X.
- Bonnefille, Stéphanie (2008). "When green rhetoric and cognitive linguistics meet: President G.W. Bush's environmental discourse in his State of the Union Addresses (2001–2008)". *Metaphorik.*de. http://www.metaphorik.de/index.htm
- Burke, Kenneth (1969). A *Rhetoric of Motives*. Berkeley and Los Angeles: University of California Press.
- Caillois, Roger (1958). Art poétique. Paris: Gallimard.
- Chevalier, Jean-Marie (2004). Les Grandes batailles de l'énergie. Paris: Editions Gallimard.
- Cox, Robert (2013). *Environmental Communication and the Public Sphere*. Los Angeles, London: Sage.
- Fillmore, Charles J. (1985). "Frames and the semantics of understanding". *Quaderni di* Semantica, vol. 6: 2, 222–254.
- Fillmore, Charles J. (1976). "Frame semantics and the nature of language". In S. R. Harnad, H. D. Steklis & J. Lancaster (Eds.), *Origins and Evolution of Language and Speech* (1–24). New York: New York Academy of Sciences.
- Gardes-Tamine, Joëlle (1996). La Rhétorique. Paris: Armand Colin.
- Gentner, Dedre & D. R. Gentner (1983). "Structure-mapping: a theoretical framework for analogy". Cognitive Science. A Multidisciplinary Journal of Artificial Intelligence, Psychology and Language, vol. 7, 155–170.
- Gibbs, Ray (1994). *The Poetics of Mind. Figurative Thought, Language, and Understanding.* Cambridge: Cambridge University Press.
- Gronbeck, Bruce E. (2008). "Rhetoric and Politics". In L. Lee Kaid (Ed.), *Political Communication Research* (135–154). New York and London: Routledge.
- Lakoff, George (2004). Don't Think of an Elephant! Know your Values and Frame the Debate. White River Junction, Vermont: Chelsea Green Publishing.
- Lakoff, George & M. Johnson (1980). *Metaphors We Live By*. Chicago: University of Chicago Press.
- Meyer, Michel (2004). La Rhétorique. Paris: Presses Universitaires de France.
- Molinié, Georges (1992). Dictionnaire de rhétorique. Paris: Le Livre de poche.
- Murray, David, Joel Schwartz & S. Robert Lichter (2002). It Ain't Necessarily So. How the Media Remake our Picture of Reality. New York: Penguin.

- Poletta, Francesca (2006). *It Was Like a Fever. Storytelling in Protest and Politics.* Chicago: The University of Chicago Press.
- Salmon, Christian (2008). Storytelling, la machine à fabriquer des histoires et à formatter les esprits. Paris: La Découverte/Poche.
- Schiffrin, Deborah (1994). Approaches to Discourse. Oxford U.K. and Cambridge U.S.A.: Blackwell.
- Schwarze, Steven (2006). "Environmental Melodrama". *Quarterly Journal of Speech*, Vol. 92, N°3, 239–61.
- Sperber, Dan (2007 –original 1975). "Rudiments of cognitive rhetoric". *Rhetoric Society Quaterly, vol. 37, Issue 4*, 361–400.
- Sweetser, Eve (1990). From Etymology to Pragmatics. Metaphorical and Cultural Aspects of Semantic Structure. Cambridge: Cambridge University Press.
- Talmy, Leonard (2000). "A cognitive framework for narrative structure". In L. Talmy, *Toward a Cognitive Semantics, Vol. II* (417–82). Cambridge, Massachussetts, London: The M.I.T. Press.
- Turner, Mark (1996). *The Literary Mind. The Origins of Thought and Language*. Oxford and New York: Oxford University Press.
- Vosniadou, Stella & A. Ortony (1989). "Similarity and analogical reasoning: a synthesis". In S. Vosniadou & A. Ortony (Eds.), *Similarity and Analogical Reasoning* (1–17). Cambridge: Cambridge University Press.

# **References 2**

Aristote (1991). Rhétorique. Paris: Le Livre de poche.

- Aristote (1997). Poétique. Paris: Mille et une nuits.
- Bonnefille, Stéphanie (2008). "When green rhetoric and cognitive linguistics meet: President G.W. Bush's environmental discourse in his State of the Union Addresses (2001–2008)". *Metaphorik.*de. http://www.metaphorik.de/index.htm
- Bonnefille, Stéphanie (2009). "Conceptualisation de la question environnemtale aux Etats-Unis: les mots verts des candidats Obama et McCain". *Bulletin de la Société Anglaise 31* (30-48). Paris: Paris X.
- Bonnefille, Stéphanie (2012). "Obama's and Sarkozy's remarks at the U.N.'s Climate Change Summit: a contest between figurative and literal language?". In B. Lewandowska–Tomaszczyk (Ed.), *Texts and Minds. Papers in Cognitive Poetics and Rhetoric* (225–242). Frankfurt am Main: Peter Lang.
- Bonnefille, Stéphanie (2013). "A cognitive linguistics approach to the rhetoric of damage control: BP's oil spill and the EPA's strategy of communication". *Entrepalavras, vol. 3, n° 1 (3)*, Fortaleza.
- Burke, Kenneth (1969). A *Rhetoric of Motives*. Berkeley and Los Angeles: University of California Press.
- Caillois, Roger (1958). Art poétique. Paris: Gallimard.
- Chevalier, Jean-Marie (2004). Les Grandes batailles de l'énergie. Paris: Editions Gallimard.
- Cox, Robert (2013). *Environmental Communication and the Public Sphere*. Los Angeles, London: Sage.

- Fillmore, Charles (1976). "Frame semantics and the nature of language". In S. R. Harnad, H. D. Steklis & J. Lancaster (Eds.), *Origins and Evolution of Language and Speech* (1–24). New York: New York Academy of Sciences.
- Fillmore, Charles J. (1985). "Frames and the semantics of understanding". *Quaderni di* Semantica, vol. 6: 2, 222–254.
- Gardes-Tamine, Joëlle (1996). La Rhétorique. Paris: Armand Colin.
- Gentner, Dedre & D. R. Gentner (1983). "Structure-mapping: a theoretical framework for analogy". Cognitive Science. A Multidisciplinary Journal of Artificial Intelligence, Psychology and Language, vol. 7, 155–170.
- Gibbs, Ray (1994). The Poetics of Mind. Figurative Thought, Language, and Understanding. Cambridge: Cambridge University Press.
- Gronbeck, Bruce E. (2008). "Rhetoric and Politics". In L. Lee Kaid (Ed.), *Political Communication Research* (135–154). New York and London: Routledge.
- http://www.entrepalavras.ufc.br/revista/index.php/Revista/article/view/183
- Lakoff, George & M. Johnson (1980). *Metaphors We Live By*. Chicago: University of Chicago Press.
- Lakoff, George (2004). Don't Think of an Elephant! Know your Values and Frame the Debate. White River Junction, Vermont: Chelsea Green Publishing.
- Meyer, Michel (2004). La Rhétorique. Paris: Presses Universitaires de France.
- Molinié, Georges (1992). Dictionnaire de rhétorique. Paris: Le Livre de poche.
- Murray, David, Joel Schwartz & S. Robert Lichter (2002). It Ain't Necessarily So. How the Media Remake our Picture of Reality. New York: Penguin.
- Poletta, Francesca (2006). *It Was Like a Fever. Storytelling in Protest and Politics.* Chicago: The University of Chicago Press.
- Salmon, Christian (2008). Storytelling, la machine à fabriquer des histoires et à formatter les esprits. Paris: La Découverte/Poche.
- Schiffrin, Deborah (1994). Approaches to Discourse. Oxford U.K. and Cambridge U.S.A.: Blackwell.
- Schwarze, Steven (2006). "Environmental Melodrama". *Quarterly Journal of Speech*, Vol. 92, N°3, 239–61.
- Sperber, Dan (2007 –original 1975). "Rudiments of cognitive rhetoric". *Rhetoric Society Quaterly, vol. 37, Issue 4*, 361–400.
- Sweetser, Eve (1990). From Etymology to Pragmatics. Metaphorical and Cultural Aspects of Semantic Structure. Cambridge: Cambridge University Press.
- Talmy, Leonard (2000). "A cognitive framework for narrative structure". In L. Talmy, *Toward a Cognitive Semantics, Vol. II* (417–82). Cambridge, Massachussetts, London: The M.I.T. Press.
- Turner, Mark (1996). *The Literary Mind. The Origins of Thought and Language*. Oxford and New York: Oxford University Press.
- Vosniadou, Stella & A. Ortony (1989). "Similarity and analogical reasoning: a synthesis". In S. Vosniadou & A. Ortony (Eds.), *Similarity and Analogical Reasoning* (1–17). Cambridge: Cambridge University Press.

# Appendix

#### Remarks by the President in State of the Union Address - 2009

It begins with energy.

We know the country that harnesses the power of clean, renewable energy will lead the 21st century. And yet, it is China that has launched the largest effort in history to make their economy energy efficient. We invented solar technology, but we've fallen behind countries like Germany and Japan in producing it. New plug–in hybrids roll off our assembly lines, but they will run on batteries made in Korea.

Well I do not accept a future where the jobs and industries of tomorrow take root beyond our borders – and I know you don't either. It is time for America to lead again.

Thanks to our recovery plan, we will double this nation's supply of renewable energy in the next three years. We have also made the largest investment in basic research funding in American history - an investment that will spur not only new discoveries in energy, but breakthroughs in medicine, science, and technology.

We will soon lay down thousands of miles of power lines that can carry new energy to cities and towns across this country. And we will put Americans to work making our homes and buildings more efficient so that we can save billions of dollars on our energy bills.

But to truly transform our economy, protect our security, and save our planet from the ravages of climate change, we need to ultimately make clean, renewable energy the profitable kind of energy. So I ask this Congress to send me legislation that places a market–based cap on carbon pollution and drives the production of more renewable energy in America. And to support that innovation, we will invest fifteen billion dollars a year to develop technologies like wind power and solar power; advanced biofuels, clean coal, and more fuel–efficient cars and trucks built right here in America.

#### Remarks by the President in State of the Union Address - 2010

And no area is more ripe for such innovation than energy. You can see the results of last year's investments in clean energy — in the North Carolina company that will create 1,200 jobs nationwide helping to make advanced batteries; or in the California business that will put a thousand people to work making solar panels.

But to create more of these clean energy jobs, we need more production, more efficiency, more incentives. And that means building a new generation of safe, clean nuclear power plants in this country. (Applause.) It means making tough decisions about opening new offshore areas for oil and gas development. (Applause.) It means continued investment in advanced biofuels and clean coal technologies. (Applause.) And, yes, it means passing a comprehensive energy and climate bill with incentives that will finally make clean energy the profitable kind of energy in America. (Applause.)

I am grateful to the House for passing such a bill last year. (Applause.) And this year I'm eager to help advance the bipartisan effort in the Senate. (Applause.)

I know there have been questions about whether we can afford such changes in a tough economy. I know that there are those who disagree with the overwhelming scientific evidence on climate change. But here's the thing — even if you doubt the evidence, providing incentives for energy–efficiency and clean energy are the right thing to do for our future — because the nation that leads the clean energy economy will be the nation that leads the global economy. And America must be that nation. (Applause.)

#### Remarks by the President in State of Union Address - 2011

This is our generation's Sputnik moment. Two years ago, I said that we needed to reach a level of research and development we haven't seen since the height of the Space Race. And in a few weeks, I will be sending a budget to Congress that helps us meet that goal. We'll invest in

biomedical research, information technology, and especially clean energy technology — (applause) — an investment that will strengthen our security, protect our planet, and create countless new jobs for our people.

Already, we're seeing the promise of renewable energy. Robert and Gary Allen are brothers who run a small Michigan roofing company. After September 11th, they volunteered their best roofers to help repair the Pentagon. But half of their factory went unused, and the recession hit them hard. Today, with the help of a government loan, that empty space is being used to manufacture solar shingles that are being sold all across the country. In Robert's words, "We reinvented ourselves."

That's what Americans have done for over 200 years: reinvented ourselves. And to spur on more success stories like the Allen Brothers, we've begun to reinvent our energy policy. We're not just handing out money. We're issuing a challenge. We're telling America's scientists and engineers that if they assemble teams of the best minds in their fields, and focus on the hardest problems in clean energy, we'll fund the Apollo projects of our time.

At the California Institute of Technology, they're developing a way to turn sunlight and water into fuel for our cars. At Oak Ridge National Laboratory, they're using supercomputers to get a lot more power out of our nuclear facilities. With more research and incentives, we can break our dependence on oil with biofuels, and become the first country to have a million electric vehicles on the road by 2015. (Applause.)

We need to get behind this innovation. And to help pay for it, I'm asking Congress to eliminate the billions in taxpayer dollars we currently give to oil companies. (Applause.) I don't know if - I don't know if you've noticed, but they're doing just fine on their own. (Laughter.) So instead of subsidizing yesterday's energy, let's invest in tomorrow's.

Now, clean energy breakthroughs will only translate into clean energy jobs if businesses know there will be a market for what they're selling. So tonight, I challenge you to join me in setting a new goal: By 2035, 80 percent of America's electricity will come from clean energy sources. (Applause.)

Some folks want wind and solar. Others want nuclear, clean coal and natural gas. To meet this goal, we will need them all — and I urge Democrats and Republicans to work together to make it happen. (Applause.)

#### Remarks by the President in State of the Union Address - 2012

And nowhere is the promise of innovation greater than in American-made energy. Over the last three years, we've opened millions of new acres for oil and gas exploration, and tonight, I'm directing my administration to open more than 75 percent of our potential offshore oil and gas resources. (Applause.) Right now — right now — American oil production is the highest that it's been in eight years. That's right — eight years. Not only that — last year, we relied less on foreign oil than in any of the past 16 years. (Applause.)

But with only 2 percent of the world's oil reserves, oil isn't enough. This country needs an all–out, all–of–the–above strategy that develops every available source of American energy. (Applause.) A strategy that's cleaner, cheaper, and full of new jobs.

We have a supply of natural gas that can last America nearly 100 years. (Applause.) And my administration will take every possible action to safely develop this energy. Experts believe this will support more than 600,000 jobs by the end of the decade. And I'm requiring all companies that drill for gas on public lands to disclose the chemicals they use. (Applause.) Because America will develop this resource without putting the health and safety of our citizens at risk.

The development of natural gas will create jobs and power trucks and factories that are cleaner and cheaper, proving that we don't have to choose between our environment and our economy. (Applause.) And by the way, it was public research dollars, over the course of 30 years, that helped develop the technologies to extract all this natural gas out of shale rock — reminding us that government support is critical in helping businesses get new energy ideas off the ground. (Applause.)

Now, what's true for natural gas is just as true for clean energy. In three years, our partnership with the private sector has already positioned America to be the world's leading manufacturer of high-tech batteries. Because of federal investments, renewable energy use has nearly doubled, and thousands of Americans have jobs because of it.

When Bryan Ritterby was laid off from his job making furniture, he said he worried that at 55, no one would give him a second chance. But he found work at Energetx, a wind turbine manufacturer in Michigan. Before the recession, the factory only made luxury yachts. Today, it's hiring workers like Bryan, who said, "I'm proud to be working in the industry of the future."

Our experience with shale gas, our experience with natural gas, shows us that the payoffs on these public investments don't always come right away. Some technologies don't pan out; some companies fail. But I will not walk away from the promise of clean energy. I will not walk away from workers like Bryan. (Applause.) I will not cede the wind or solar or battery industry to China or Germany because we refuse to make the same commitment here.

We've subsidized oil companies for a century. That's long enough. (Applause.) It's time to end the taxpayer giveaways to an industry that rarely has been more profitable, and double–down on a clean energy industry that never has been more promising. Pass clean energy tax credits. Create these jobs. (Applause.)

We can also spur energy innovation with new incentives. The differences in this chamber may be too deep right now to pass a comprehensive plan to fight climate change. But there's no reason why Congress shouldn't at least set a clean energy standard that creates a market for innovation. So far, you haven't acted. Well, tonight, I will. I'm directing my administration to allow the development of clean energy on enough public land to power 3 million homes. And I'm proud to announce that the Department of Defense, working with us, the world's largest consumer of energy, will make one of the largest commitments to clean energy in history — with the Navy purchasing enough capacity to power a quarter of a million homes a year. (Applause.)

Of course, the easiest way to save money is to waste less energy. So here's a proposal: Help manufacturers eliminate energy waste in their factories and give businesses incentives to upgrade their buildings. Their energy bills will be \$100 billion lower over the next decade, and America will have less pollution, more manufacturing, more jobs for construction workers who need them. Send me a bill that creates these jobs. (Applause.)

#### Remarks by the President in the State of the Union Address - 2013

Today, no area holds more promise than our investments in American energy. After years of talking about it, we're finally poised to control our own energy future. We produce more oil at home than we have in 15 years.

(Applause.) We have doubled the distance our cars will go on a gallon of gas, and the amount of renewable energy we generate from sources like wind and solar — with tens of thousands of good American jobs to show for it.

We produce more natural gas than ever before — and nearly everyone's energy bill is lower because of it. And over the last four years, our emissions of the dangerous carbon pollution that threatens our planet have actually fallen.

But for the sake of our children and our future, we must do more to combat climate change. (Applause.) Now, it's true that no single event makes a trend. But the fact is the 12 hottest years on record have all come in the last 15. Heat waves, droughts, wildfires, floods — all are now more frequent and more intense. We can choose to believe

that Superstorm Sandy, and the most severe drought in decades, and the worst wildfires some states have ever seen were all just a freak coincidence. Or we can choose to believe in the overwhelming judgment of science — and act before it's too late. (Applause.)

Now, the good news is we can make meaningful progress on this issue while driving strong economic growth. I urge this Congress to get together, pursue a bipartisan, market–based solution to climate change, like the one John McCain and Joe Lieberman worked on together a few years ago. But if Congress won't act soon to protect future generations, I will. (Applause.) I will direct

my Cabinet to come up with executive actions we can take, now and in the future, to reduce pollution, prepare our communities for the consequences of climate change, and speed the transition to more sustainable sources of energy.

Four years ago, other countries dominated the clean energy market and the jobs that came with it. And we've begun to change that. Last year, wind energy added nearly half of all new power capacity in America. So let's generate even more. Solar energy gets cheaper by the year — let's drive down costs even further. As long as countries like China keep going all in on clean energy, so must we.

Now, in the meantime, the natural gas boom has led to cleaner power and greater energy independence. We need to encourage that. And that's why my administration will keep cutting red tape and speeding up new oil and gas permits. (Applause.) That's got to be part of an all-of-the-above plan. But I also want to work with this Congress to encourage the research and technology that helps natural gas burn even cleaner and protects our air and our water.

In fact, much of our new-found energy is drawn from lands and waters that we, the public, own together. So tonight, I propose we use some of our oil and gas revenues to fund an Energy Security Trust that will drive new research and technology to shift our cars and trucks off oil for good. If a nonpartisan coalition of CEOs and retired generals and admirals can get behind this idea, then so can we. Let's take their advice and free our families and businesses from the painful spikes in gas prices we've put up with for far too long.

I'm also issuing a new goal for America: Let's cut in half the energy wasted by our homes and businesses over the next 20 years. (Applause.) We'll work with the states to do it. Those states with the best ideas to create jobs and lower energy bills by constructing more efficient buildings will receive federal support to help make that happen.