pro-posições
e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

ARTIGOS

Visual education and climate change: The invention of global warming[1]

Educação visual e mudanças climáticas: a invenção do aquecimento global [2]

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Abstract:
Using the covers of the reports available on the website of the Intergovernmental Panel on Climate Change, working with the Foucauldian discourse analysis, we conducted our study by verifying the emergence of three statements: the globalization of the warming process; the dramatization of climate change and its effects; and the risks of warming to different types of populations. Our objective was to suspend the judgment on the object global warming and, from the surface of its statements, to evidence it as a social construct, fraught with relations of knowledge and power. The description of these statements can evidence them as a social production, in which the discursive control occurs by the emotionality and the reconstruction of scientific conceptions. This process points to the pedagogical potential of these statements, since readers can grasp concepts, position themselves and act socially in response to the problems and solutions conveyed in these documents.
Keywords: education, visual education, global warming, Foucauldian discourse analysis, visual culture

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pro-posições
e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

Resumo: *Valendo-nos das capas dos relatórios do Painel Intergovernamental sobre Mudanças Climáticas, na esteira da análise foucaultiana do discurso, verificamos a emergência de três enunciados: a globalização do processo de aquecimento; a dramatização das mudanças climáticas e de seus efeitos; e os riscos do aquecimento para diferentes populações. Nosso objetivo foi suspender o julgamento acerca do aquecimento global e, a partir da superfície de seus enunciados, evidenciá-lo como um constructo social, eivado de relações de saber e poder. A descrição desses enunciados evidenciou-os como uma produção social, em que o controle discursivo ocorre pela emotividade e pela reconstrução de concepções científicas. Tal processo aponta para o potencial pedagógico desses enunciados, já que os leitores podem apreender conceitos, se posicionar e atuar socialmente em resposta aos problemas e soluções veiculados nesses documentos.*

Palavras-chave: *educação, educação visual, aquecimento global, análise foucaultiana do discurso*

Introduction

We consider two aspects related to education and visual education. The first refers to The Great Didactic [*Didactica Magna*][3] by John Amon Comenius (1649/1996), specifically the chapters "The principles of conciseness and rapidity in teaching" and "The method of the sciences, specifically", in which he writes:

> It will also be of great use if an abstract of the contents of all the books used in the class be placed on the walls of the room. This should consist of the text, greatly abbreviated and condensed, or of illustrative pictures and reliefs, by means of which the senses, the memory and the understanding may be daily exercised in conjunction. (p. 173)

> (...)since the senses are the most truly servants of the memory, this method of sensuous perception, if universally applied, will lead to the permanent retention of knowledge that has once bee acquired. For instance, if I have once tasted sugar, seen a camel, heard a nightingale sing, or been in Rome, and have on each occasion attentively impressed the fact on my memory, the incidents will remain fresh and permanent. We find, accordingly, that children can easily learn Scriptural and secular stories from pictures" (p. 185-186)

Both excerpts of this work show how Comenius strongly considered the purpose of images in education, be it in school or a visual education established beyond the formal and official educational environments.

[3] Translator's note: excerpts in English were taken from Comenius, J. A., & Keatinge, M. W. (1967). *The great didactic of John Amos Comenius*. New York: Russell & Russell.

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e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

The second perspective refers to visual education from the proposal of thematic dossiers ("A Educação…", 2009; "Imagens…", 2010; "Educação…", 2012; "Paisagens…", 2013; "Mapas…", 2014) and books (Cazetta & Oliveira, 2013; Ferraz & Nunes 2013; Nunes & Novaes, 2017) from the research network *"Imagens, geografias e educação"* (Images, geographies, and education), which has invested on the power of images- photos (analogic and digital), cinema, maps, drawings, comics/graphic novels, etc. – and their educational developments in formal and non-formal contexts, and teacher-training university majors. The power of images to promote a certain visual education, announced in the past by Comenius, is not to educate the eyes to find in the worldly things their mimetic correspondents through valuing "certain themes, colors, and shapes, but, mainly, to create a thought on what is to live; on your eyes as guiding tools for the act of knowing"" (Oliveira, 2009, p. 19).

To discuss this strength and educational power of images, we analyzed 22 report covers available in the website of the Intergovernmental Panel on Climate Change – IPCC (Leite, 2015), in five Assessment Reports and the single issue of the Supplementary Reports. As IPCC can be considered one of the most important, legitimate, and trustworthy instances of information dissemination on climate changes- if not the top instance- we recognize in its discursive production a study field to be explored, as the visual statements on the covers of those reports, aiming to highlight the emergency of the object *global warming*, as a type of monument.

The aim here is not to show who lies and who tells the truth about this object, but to make a postcritical analysis, drawing out the textual and visual statements from these covers that demand a status of truth and reality on global warming. Therefore, there is a need to deconstruct the supposedly transparency of languages and spaces, considering "the spatialities as an accumulation of discursive layers and social practices", [and operate] "in this region in which language (discourse) and space (historical object) meet each other, in which time gives to space its malleability, variability, explanatory value and, further yet, its warmth, and human truth effects" (Albuquerque, 2011, p. 33). Languages "are like actions, inseparable practices of an institution", therefore, they "do not present what is real, but establish realities" (Albuquerque, 2011, p. 34)

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http://dx.doi.org/10.1590/1980-6248-2017-0172

In these reports, we were interested on the cover images and titles, which are after all narrative producers of global warming nowadays, establishing it as a global climate phenomenon. IPCC normally uses images on its report covers to invite the reader, as they are inserted in a broader context of visual education on global warming – a result of climate changes. There is no concern on pointing out the places portrayed in this imagetic production, it could be anywhere on Earth, as warming is global (Braga & Cazetta, 2012).

These images simultaneously ratify and produce an effect of reality around the emergency of a knowledge object and a power space that has become global/planetary. The great number of images produced by science "officially guided towards knowledges production…are the base of original aesthetics. When we receive them, they displace our positions faced by from the world, from others, from ourselves" (Sicard, 2000, p. 25), that is, these images subjectivize us. However, "the intentions, the choices that introduced the achievement, the ways of fabrication, the restriction, the artifacts are left aside" and "thus take place the proof through image" (Sicard, 2000, p. 32). Sicard questions: "what would happen if they were judged, analyzed, exposed in public square, if part of the authors were shown and with them the subjectivity of what is presented as automatic and objective?" (2000, p. 33). The same question could be made on the production and fabrication of global warming images.

The visibility and sayability in course on this object have, on the mentioned reports, put into circulation a version of warming, as the discursive order is necessarily constituted by ways of seeing and talking about a certain object, in this case, global warming. "While visibilities are ways of seeing and making something be seeing, sayability are ways of saying and make say" (Lenzi, 2016, p. 70). In this sense, we approach the study object as a historical construction, a result not only of discursive disputes between the knowledge fields involved (such as environmental sciences), but also the material production of desires that operate a whole machinery guided towards the material production of desires or various types of technical objects, involving the so-called environmental problems and possible solutions, as well as the delimitation of national and international public policies (Ribeiro, 2008).

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e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

To Foucault (1971/2004), the movement to guide the attention to discourse is justified by a series of concerns towards its ephemeralities, powers, dangers, and its ability to bring out disputes, victories and defeats using words or images. The author affirms that "the production of discourse is at once controlled, selected, organised, and redistributed by a certain number of procedures whose role is to ward off its powers and dangers, to gain mastery over its change events, to evade its ponderous, formidable, materiality"[4] (pp. 52, in the English version).

One of the discursive forms of control that interests us is the system of exclusion that opposes true and false. Such separation has been established in different ways through history and in contemporary time, through institutional supports and forms of knowledge application, distributions, and valorization in society. This will to truth that permeates certain discourses exerts pressure and coercion over other discourses, controlling and delimiting them by various procedures, external and internal to the discourse itself. However, this power of constraint becomes obscured or ignored by the will to truth, showing only its force, richness, and universality (Foucault, 1971/2004).

The relation between scientific discourse and the notion of truth has been built to produce a strong identification. About this, Foucault (2006) affirms:

> … in fact, by truth I do not understand a type of general rule, a series of propositions. I understand by truth the assembly of procedures that allow everyone at every moment to make statements that will be considered truths. There is no absolute supreme instance. There are regions in which these effects of truth are perfectly coded, where the procedure through which one can state truths are previously known, regulated. These are, in general, the scientific domains. (pp. 232-233)

It is important to consider the control of subjects that enunciate the statements, imposing rules and demands that limit the possibility of enunciation and the access to scientific communities. To Foucault (1971/2004), " not all regions of discourse are equally open and penetrable; some of them are largely forbidden (they are differentiated and differentiating), while others seem to be almost open to all winds and put at the disposal of every speaking subject, without prior restrictions" (p. 62 of the English version). Some more restrictive types of discourse, as the scientific one, demand a specific position from the speakers, including their qualification, some defined gestures and behaviors, as well as predicting the effects and limits

[4] Translator's note: quotations in English from the text "The Order of Discourse" were taken from Wright, E., & Young, R. (1983). Untying the Text: A Post-Structuralist Reader. Poetics Today, 4(1), 173. doi:10.2307/1772163

http://dx.doi.org/10.1590/1980-6248-2017-0172

that such discourses can or should produce in their targeted audience. Such rituals lead to the formation of a more restricted or broader groups in which the discourses have a controlled circulation. However, the author mentions the social appropriation of discourses, in a wide scale, done, for instance, through educational practices, which can be considered submission systems of the subjects to the knowledge and power of circulating discourses.

The reports we consider here relied on scientific sayings and actions, regarding their contents and procedures to communicate their research results, presenting graphics and tables as a specific technical language producing an access restriction, as previously mentioned. The effect is the production and reaffirmation of truths directed towards a specialized public, scientists in the area, especially when it comes to the creation of reports by work groups that aim to characterize the physical base of the supposed climate changes and the consequences of such alterations. Other topics presented in the reports point to ways of overcoming the environmental problems described, also presenting a specific language, towards public-policy makers in different countries which could make the efforts to put such proposals into practice.

The issues we are interested to discuss refer to the visual discourses in the report covers that, beyond the textual narrative of the material, can produce and disseminate statements to a broader audience, capturing its attention and, at the same time, showing and strengthening discursive elements dear to the topic of global warming. Even though the targeted audience is broader than the scientific community and public policy managers, the discursive elements are presented in a controlled manner, with an educational potential, in a certain order that we wish to analyze.

To this analysis we were inspired by the works of Foucault on the description of statements as discursive elements build in a singular way, also considering the possible relations with other statements or groups of statements. Beyond unities of discourse, statements are functions that cross sets of units and structures and make themselves present with certain contents, subjects, spaces, and times, always configuring a material essence. (Foucault, 1969/2012).

We were interested on the images and titles on the covers of the Assessment and Supplementary Reports. These images were photos, supposedly digital or digitalized, producing a narrative on global warming nowadays. Therefore, our aim in this text was to suspend judgement on the object global warming and, from the surface of the statements, show it as a

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e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

social construct, marked by knowledge and powers, that spread associated to other statements and discursive formations.

Next, we will briefly present the website of IPCC and, later, present the study of the five covers of the Assessment Reports and the single issue of the Supplementary reports, in a total of 22 covers. The analysis is based on three statements: globalization in the warming process; the dramatization of climate changes and their effects; and the risks of warming to different populations.

The website of The Intergovernmental Panel on Climate Change

The website of IPCC (www.ipcc.ch) is available in six languages (Arabic, English, Spanish, Russian, Chinese, and French), besides the countries that committed themselves to translate IPCC reports to the non-official languages of the United Nations (UN)- 22 countries had already translated, even if partially, the available reports showing the dispersive character of the discourse promoted by IPCC on global climate changes. It is worth highlighting that the topic was intensively debated on the 1980s, producing an appropriate context to the creation of IPCC in 1988, when initiatives were taken to review the knowledge of environmental sciences on global climate changes, as well as how to study the impacts of those changes and to implement strategies to answer them.

IPCC, when created by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), updated information on climate changes and the possible effects on the environment – dichotomizing in anthropic and natural- through the analysis and evaluation of information from recent researches on global warming, to fundament their recommendations and decisions. According to its website, IPCC does not lead any research, nor does it monitor data or parameters related to climate. The institution is established by the cooperation, supposedly voluntary, of scientists from 195 countries- members of the UN and WMO. There is a tacit agreement sustained by the scientific base of IPCC regarding the independence of science on conflicts external to the academic and research institutions. This agreement also involves the transparency on the release of information, supporting and legitimizing the discursive production of IPCC through the reports and other data available in

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their website. After all, our society values science to reach "truth" (Ramos & Silva, 2009). Thus, we have the appropriation of images, be them digital photo or not, connected to textual language to produce global warming that, in a great measure, starts to exist through a set of reports and edited images, subjetivizing us. Mass media communication and educational works (for example, books, didactic and educational material, etc.) incorporated statements from IPCC, visually educating us on global climate changes.

The Assessment and Supplementary Reports were written by three working groups (WG) of IPCC:

- WG I: deals with the physical aspects of climate changes;
- WG II: approaches the impacts of climate changes, the adaptation, and vulnerability of socioeconomic and natural systems; and
- WG III: deals with climate changes mitigation, analyzing the option to limit or stop the emission of greenhouse-effect gases.

Each of those groups writes one report for each Assessment Report, for example, the *First Assessment Report* – FAR, published and released in 1990, warned that the consequences of climate changes required international cooperation. This has led to the creation of the United Nations Framework Convention on Climate Change – UNFCCC. The *Second Assessment Report: Climate Change* – SAR, published in 1995, by presenting the proposals to mitigate the emission of greenhouse-effect gases, fomented the creation, in 1997, of the Kyoto Protocol[5]. The *Third Assessment Report: Climate Change* – TAR and *Fourth Assessment Report: Climate Change* – AR4, respectively available in 2001 and 2007, dealt with the mitigation of climate changes in the context of sustainable development, focusing on the integration of those changes in policies of sustainable development. Finally, between 2013 and 2014 there was the publication of the last report.

[5] For more details, see: http://unfccc.int/kyoto_protocol/items/2830.php

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Since the SAR-1995, IPCC started to create Synthesis Reports[6]. There are other two types: the *Special Reports*, with assessments of specific problems (Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptations; Renewable Energy Sources and Climate Change Mitigation; Carbon Dioxide Capture and Storage, and other themes[7]); and the Methodology Reports, published to guide the elaboration of inventories of greenhouse-effect gases, to fulfill the demands of UNFCCC[8,9]. These reports were written since the 1990s, resulting into five Assessment Reports and one Supplementary, besides the beforementioned *IPCC Special Reports* and the Methodological Reports.

In the IPCC website we focused on two types of reports: Assessment Reports and the single issue of the Supplementary one.

The phenomenon of global warming is presented in these documents as a long-duration process, that could be grasped by a single photo or even a common film. However, the report covers are illustrated with images that seem to present contemporary scenes, with no indication of date or historical period.

Among planispheres, orbit images, and circles: the globalization of warming

The first statement refers to global warming as a planetary phenomenon. From the 22 covers analyzed, referring to the five Assessment Reports and the single issue of the Supplementary Reports, five used cartographic language and remote monitoring, shown by the iconic formats of planispheres and orbit bidimensional images of Earth; in three of them, they used a circular shape, showing the global character of warming.

[6] http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml
[7] For more details, see: http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml
[8] For more details, see: http://newsroom.unfccc.int/
[9] For more details, see: http://www.mma.gov.br/clima/convencao-das-nacoes-unidas

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http://dx.doi.org/10.1590/1980-6248-2017-0172

Coming back to the covers of two reports in which cartographic language was used, the *Synthesis Report* of *IPCC Second* (SAR-1995) and the *Fourth Assessment Report* (2007), we highlight a cover on figure 1 bellow.

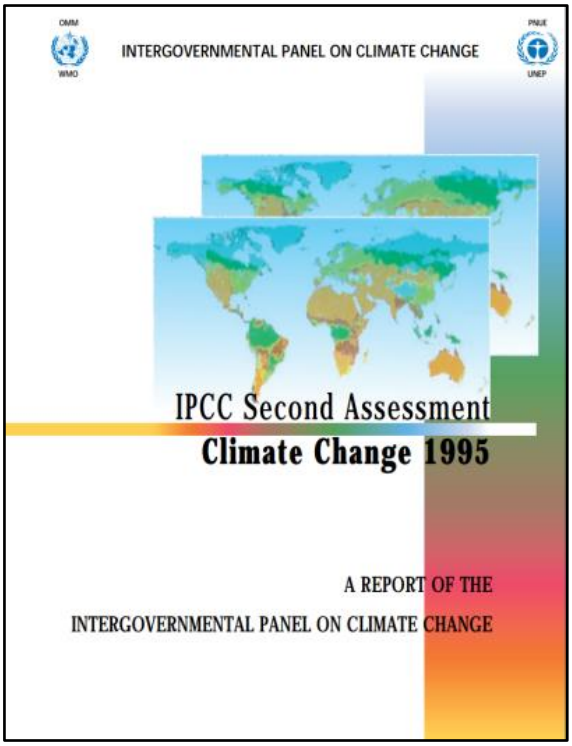

Figure 1 – Cover of the *Synthesis Report*
Scientific Assessment of Climate Change
(*IPCC Second Assessment Report* – SAR 1995)
Source: https://www.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf

It is interesting to notice that the maps, in the planisphere format, were used in the Synthesis Reports of IPCC, created based on the *Second Assessment Report* (SAR-1995). Planispheres are commonly used to represent synthesis or densities of the spatial distribution of phenomena which, supposedly, have extensive and temporal occurrences on Earth. After all, we are used to these representations or "iconic formats" that, in the perspective of English geographer Doreen Massey (2008, p. 160), show us a truth about phenomena that would take place around the whole world, such as global warming.

When comparing figures 1 and 2, the later taken from a geography atlas, we noticed that the planisphere used to compose the cover layout on figure 1 was taken from some publication

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e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

of the sort. Climate planispheres, as well as maps from thematic cartography, are generally created observing international cartographic conventions. Climate planispheres are normally conceived by using warm colors to present the types of climate in the globe. Associating the occurrence of climate types to warm colors is equivalent in the cartography language to the geography of global warming. It ensures via imagetic policies and aesthetic, a "reality" of global warming whose discursive existence has been having an increasing repercussion due to the creation of a spatial imagination that, when presented visually, legitimates and establishes itself as ordinary.

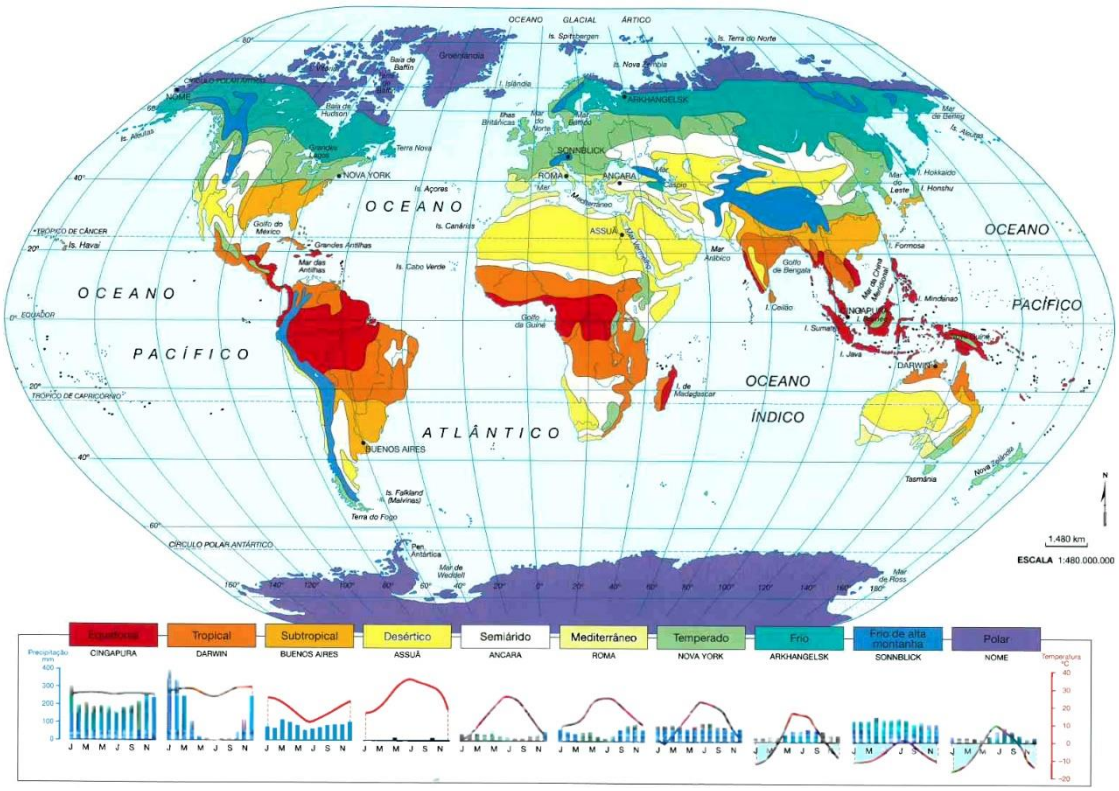

Figure 2 – Climate planisphere
Source: Ferreira (2010, p. 22)

Regarding the language of remote monitoring, orbital images were used in the iconic format of Earth globes. We highlight a colored "night" composition, figure 3, commonly disseminated nowadays via platforms as Google Earth.

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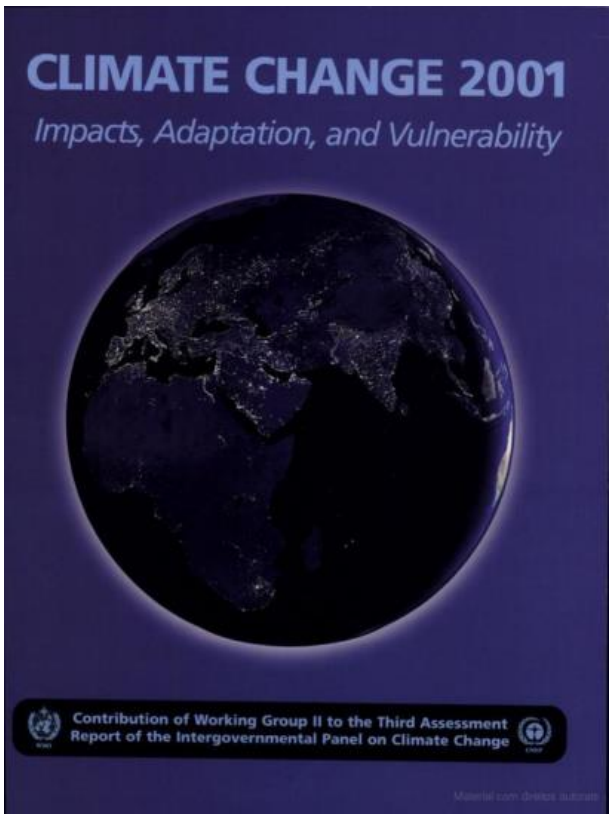

Figure 3 – Cover of the report from Work Group II
Scientific Assessment of Climate Change
(*IPCC Third Assessment Report* – TAR 2001)
Source: http://www.ipcc.ch/ipccreports/tar/wg2/index.htm

In the center of figure 3 we have Earth's night with lights clearly creating the contours of Europe and the Middle East, in addition to some countries, such as India, China, and Japan; the African continent does not have enough artificial light to make its cartographic contours completely visible in the night image. The creation of images presenting in 2D the night aspect of Earth – that has been exhaustingly circulated in digital media via tridimensional models (3D)- serves a double purpose: indicates the countries' socioeconomic development; and promotes geographic stereotypes, making it common for us certain sights of what is established as *the* real global warming. If we associate figure 3 to the subtitle in the cover "Impacts, adaptation, and vulnerability", we can perceive a certain disconnection between significant and signification, but both establish a repertoire of what is legitimate, credible, and sayable (through text and image) on global warming.

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The three last covers refer to *Working II* (SAR-1995), Synthesis Reports of TAR-2001 and the *Fifth 2013-2014*. They called our attention because, even though they do not show iconic shapes as the Earth globe, they present a reminiscence of a sphere, referring to a global phenomenon. In figure 4, the photos displayed in hexagonal shapes were gathered in a format that reminds a soccer ball. The hexagons present windmills, electric power lines, automobiles, waves, hurricanes, animals- elements of a global warming discursive order- whose assemblage is similar to pieces of a mosaic referring to three types of environment, urban, maritime, and glacial, in which the supposed effects of global warming were already perceived. Even though the images are diversified, they are placed in similar hexagons that fit as mosaic pieces, forming a sphere, pointing to a supposed global functional integration of all these elements, with similar intensities.

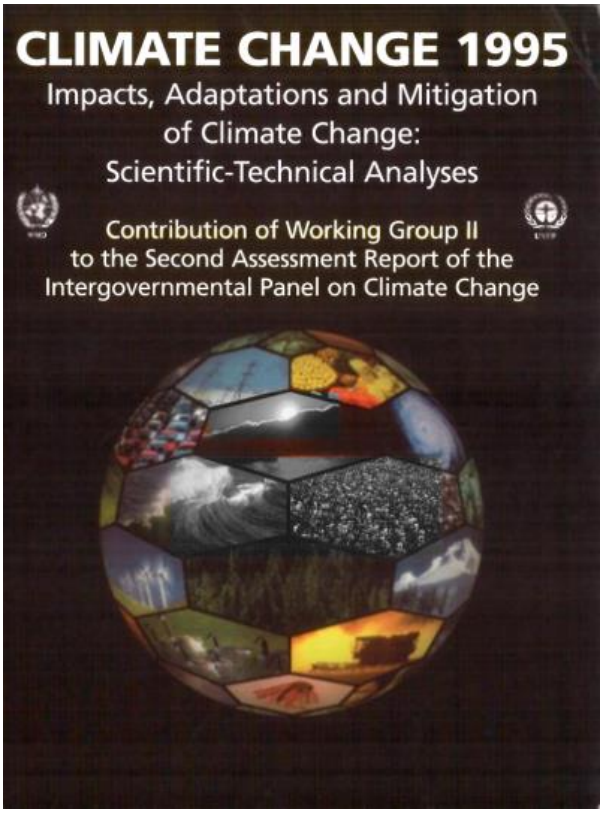

Figure 4 – Report cover- Work group II

Scientific Assessment of Climate Change

(IPCC Second Assessment Report – SAR 1995)

Source: http://www.ipcc.ch/ipccreports/sar/wg_II/ipcc_sar_wg_II_full_report.pdf

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The dramatization of warming: climate changes, effects, and mitigation

In this item we describe a frequent statement in the material analyzed: the association of climate changes to global warming, among them, the increase of temperatures, melting glaciers and other alterations, in addition to the possibilities to reverse these problematic situations caused by human action.

We can perceive the dramatic tones of the images to emotionally involve the reader. The images that produce this discourse are mostly present in the covers of WG I, which bring information associated to physical sciences and discuss scientific aspects that permeated the alleged warming problem.

The statement points to an increase in the temperature through images of beaches and deserts, also through warm colors. It is emblematic that the cover of the first report (figure 5) shows a beach under a sunset with a reddish sky. On the FAR GII (1990) and on TAR SY (1995) there are desert environments and ruddy- colored ground Also, in the cover of WGII Supplementary report of 1992 there is a white-sand beach, with bright light and coconut trees suggesting a tropical nature and, therefore, a hot place.

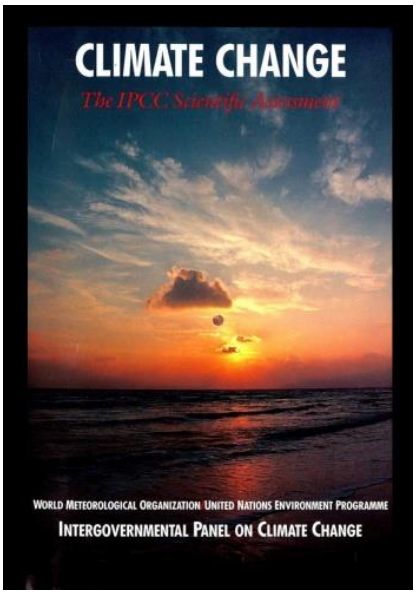

Figure 5 – Cover of WG I Report

Scientific Assessment of Climate Change

(*IPCC Firth Assessment Report* – FAR 1990)

Source: http://www.ipcc.ch/ipccreports/far/wg_I/ipcc_far_wg_I_cover.pdf

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e-ISSN 1980-6248
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Such statement is built in association with other discourses highly spread in several media outlets, producing the idea of beaches and deserts as hot places. The option to photograph tropical environments, during the day, with strong lighting, makes it easier to immediately identify the type of places, which we could even be called logos.

According to Sarlo (2014), a logo is a brand that synthetizes innumerous references associated to hyperidentities which transform cities in socially recognizable icons, with an attractive power to the commercialization of that touristic space. The concept of logo could also be thought in relation to natural environments, as discussed by Antunes (2016), because it helps the process of production and recognition of places explored by ecotourism, as ideal paradises with spectacular and exotic elements opposed to the urban environment. According to the author, seaside paradises are presented in a tropical warm scenery, constantly sunny, with white sand and transparent waters.

On the other hand, the option for images with a predominance of what has been conventionally called warm colors reinforce the idea of high temperatures. If we associate this statement to the scientific discourse, we see that the colors represent sensations created in the brain after nervous stimuli sent through the human eye from capturing the light diffused by objects. These can also be defined by types of visible radiation. Warm colors refer to the visible light radiation in the red, orange, and yellow spectrum, whose wavelength is bigger compared to the extreme opposite in the spectrum of electromagnet waves sensitive to the human eye.

The analysis of the selected images also point to the construction of a imminence statement on glacier melting, as the photo on the cover of the Supplementary Reports in 1992, with an iceberg in a lake, and the report of WG I in 2013 (FAR G1) (Figure 6), with a panoramic aerial view of a glacier. These images do not bring a clear idea of melting caused by the possible temperature rise, as the existence of glaciers and icebergs detached from them can result from normal and seasonal processes, which can represent, for instant, just a regular summer event. However, this image connected to the reports in question produce an association that helps constructs the statement we are analyzing.

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e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

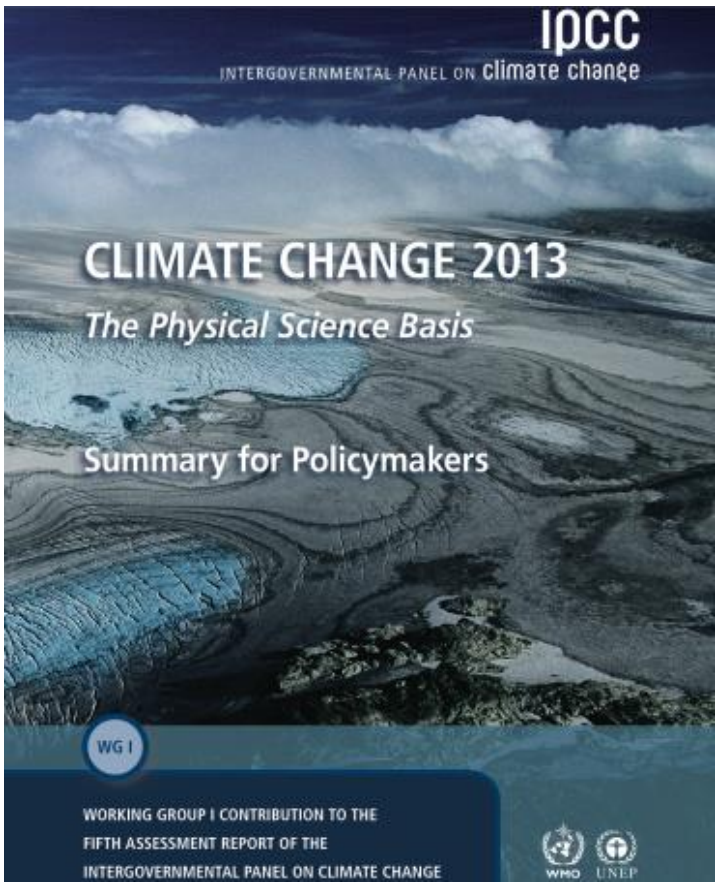

Figure 6 – Cover of WG I Report

Climate Change 2013: The Physical Science Basis

(*IPCC Fifth Assessment Report*/2013-2014)

Source: https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WGIAR5_SPM_brochure_en.pdf

The discourse on the drastic climate alterations associated to global warming is reinforced by the idea of alteration on meteorological aspects, such as rainfall rates which contributed to increase ocean levels. The cover of GT I Report in 1995 (SAR G1) (Figure 7) shows a threatening storm scene with spectacular lightnings and dark clouds over a city. Considering the six reports of WG I, dedicated to physical sciences, this is the only cover showing urban elements or associated to human populations.

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http://dx.doi.org/10.1590/1980-6248-2017-0172

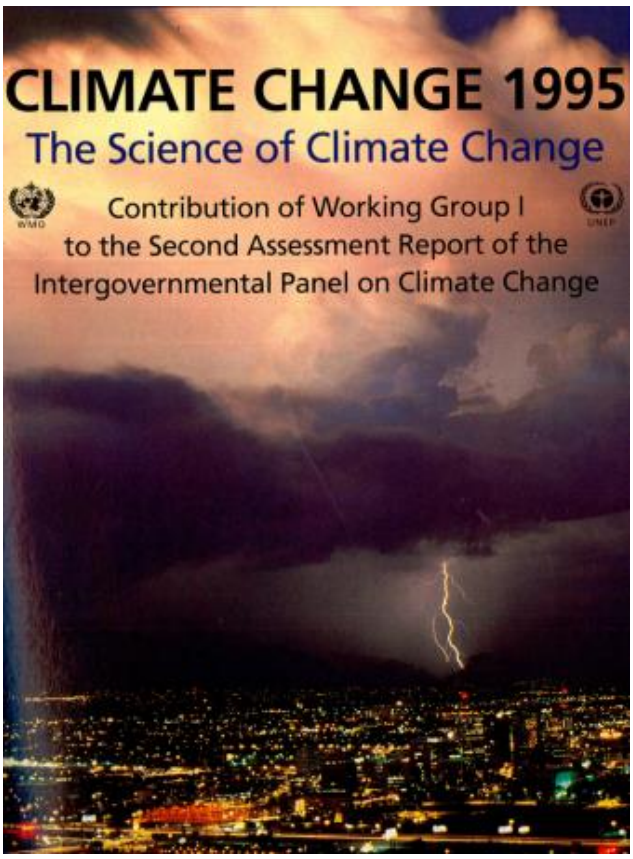

Figure 7 – Cover of WG I Report

The Science of Climate Change

(*IPCC Second Assessment Report* – SAR 1995)

Source: http://www.ipcc.ch/ipccreports/sar/wg_I/ipcc_sar_wg_I_full_report.pdf

When comparing these photos with those on the report covers on initiatives and public policies to mitigate the supposed effects of global warming, we perceived that the last ones have milder scenes. Images of solar panels with a power grid on the background (*Fourth Assesment Report, Working Group III*, 2007), or a big city seen from a far with a slightly cloudy sky (*Fifth Assesment Report, Working Group III*, 2014) which do not display the same drama. On figure 8 we can see two people biking under an almost cloudless sky and, on the background some wind turbines. A couple of elderly people exercising outdoors, in a carefree situation, evoking an idea of peacefulness and good quality of life.

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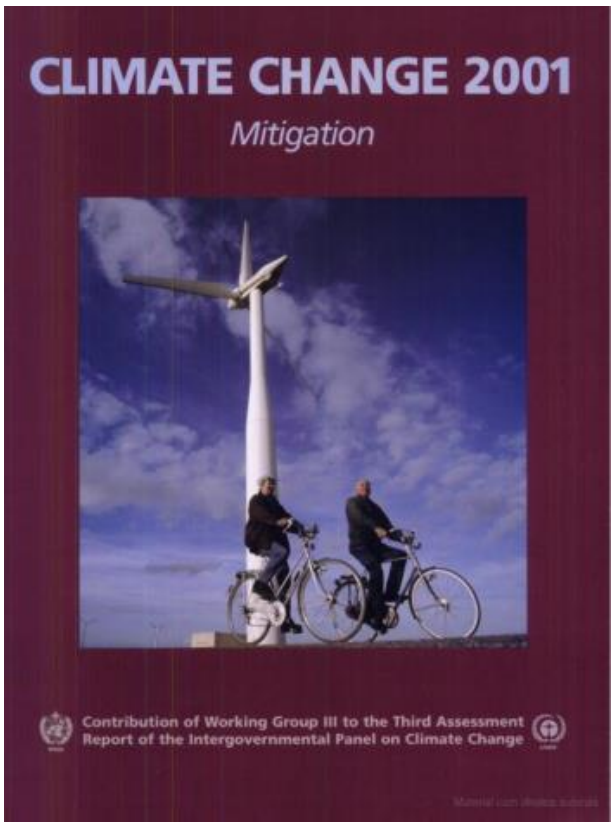

Figure 8 – Cover of WG II: *Mitigation*
(*IPCC Third Assessment Report – Climate Change* TAR 2001)
Source: http://www.ipcc.ch/ipccreports/tar/wg3/index.htm

This creates a polarization of two situations: one characterized by the seriousness of global warming and another on the implementation of solutions that could reassure populations and governments around the world, many of them associated to renewable energies, as solar and wind power.

The statement on the drastic climate alterations, which can raise many problems, is taken as a trustworthy diagnosis of the current global situation, with the support of the research community of different countries and presented as unquestionable. This discourse is related and complements the statements that propose a set of solutions to mitigate the environmental problem and recover good conditions of life and world production if the different nations agree to faithfully follow their recommendations.

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Different populations, different risks, the same threat

Besides been presented as an event that would negatively affect the natural environment, global warming is seen by the analyzed materials as an important factor that would lead to possible changes on the ways people live and their quality of life. Exactly because it is considered a global phenomenon, some report covers highlight that the effects could be also be seen in urban centers, and not only in populations that live in precarious conditions.

We will approach in detail how people appear on the IPCC report covers in the period of the analysis. Generally, we perceived that human presence is related to two different contexts: one in a scenery referring to communities considered traditional, indicating economic precarity directly related to the idea of environmental frailty; the other related to metropolises, showing the elevated populational density. However, even if both situations refer to climate interference in different environments, we can see evidences that rural regions would suffer more strongly the its consequences and that, on the other hand, highly urbanized places could contribute to possible environmental damages.

Human constructs (especially photos of buildings and panoramic shots of cities) are present in most editions of IPCC reports. Nonetheless, since 1995, this presence is stronger. These covers are often related to texts that associate climate alterations with human beings through ideas of impact mitigation, socioeconomic factors, vulnerability, and adaptation of populations faced by temperature changes.

We noticed that in the reports of WG II of the Fourth Assessment Report (2007) and the Fifth Assessment Report (2014), the titles are related to the assessment of impacts, adaptation, and vulnerability. These works have covers with images of people in contexts apparently far from cities, giving the impression of places that would suffer the possible negative effects of climate change. In figure 9, we can see one of these covers with a child carrying buckets in a non-urban scenery.

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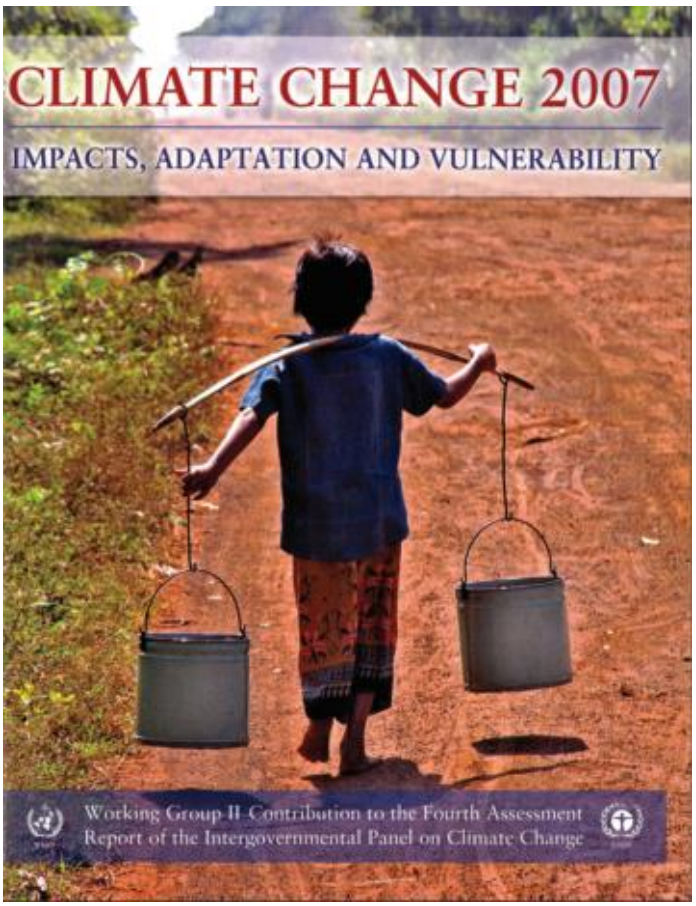

Figure 9 – Cover of WG II report

Impacts, Adaptation and Vulnerability

(*IPCC Fourth Assessment Report* – AR4 2007)

Source: http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf

The covers of analyzed reports, with images of non-urban communities, can signalize to the reader that those people would be part of the so-called traditional peoples. In figure 9, we can perceive these on the way the child carries the buckets using a long stick, the clothes, the bare feet, and the non-paved road.

Together with the discourse on autochthonous communities (Brandão & Borges, 2014), we notice the recurrent association of these people with ideas of economic frailty (Figure 10). Thus, connecting a notion of poverty to the theme of these compositions, we can think that those people, with no infrastructure and certain technologies, would be the main targets of the harmful effects of environmental variations. As probable negative repercussions, we see images that show agricultural actions, apparently rudimental, performed by these communities.

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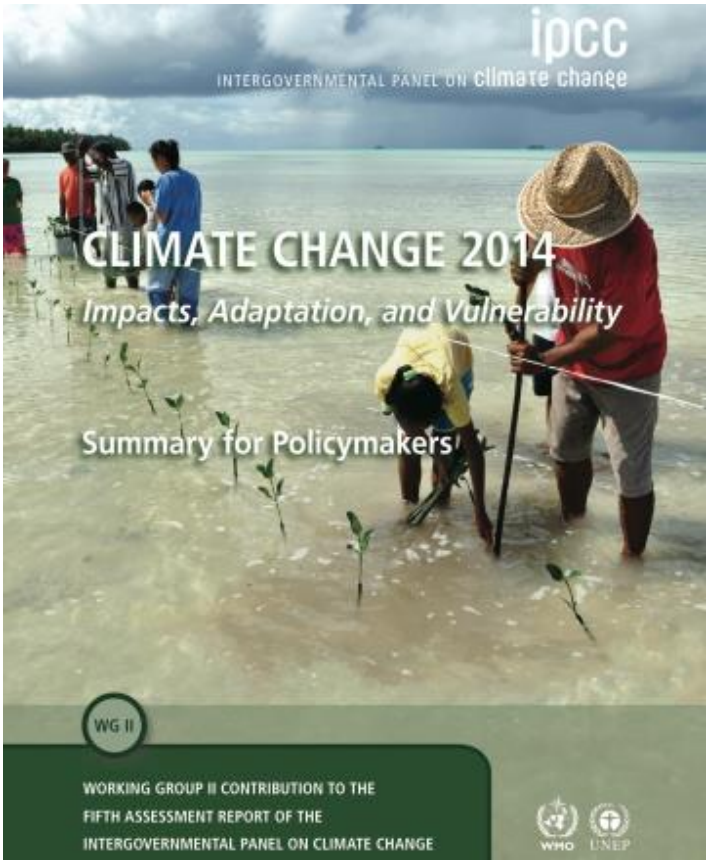

Figure 10 – Cover of WG II Report

Impacts, Adaptation and Vulnerability

(*IPCC Fifth Assessment Report* 2014)

Source: http://ipcc-wg2.gov/AR5/images/uploads/WG2AR5_SPM_FINAL.pdf

On Figure 10, the analyzed cover shows a supposedly precarious farming, which is reinforced by guiding ideas related, as beforementioned, to notions of frailty, adequation, and effects of climate changes.

Following the same idea of making the produced content visible, but in a city context, we frequently see big cities on the covers (Figure 11). They are mostly panoramic images that show the infrastructure of great urban centers and the lack of natural elements, highlighting the color grey. However, regarding human presence, an important characteristic of this item, we have noticed the production of areal-view photos, showing the populational density in these places, such as on the cover of WG III on the SAR (1995).

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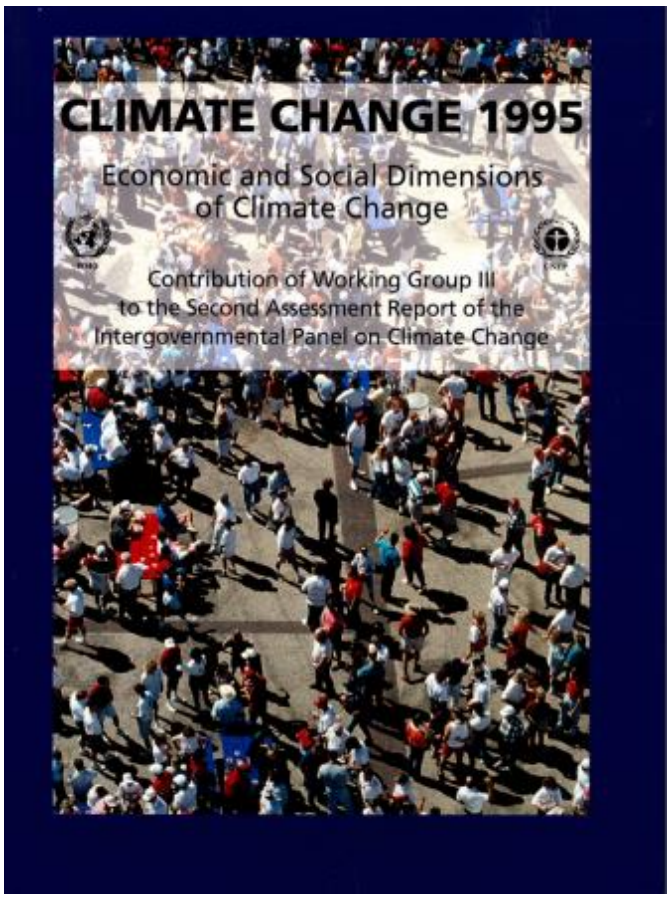

Figure 11 – Cover of WG III report

Economic and Social Dimension of Climate Change Full Report

(*IPCC Second Assessment Report* – SAR 1995)

Source: http://www.ipcc.ch/ipccreports/sar/wg_III/ipcc_sar_wg_III_full_report.pdf

In this situation, especially because it is an urban environment, there is the need to reinforce the global effects of climate alteration beyond the so-called traditional communities, also affecting people living in the metropolises. The image chosen for the cover of this work shows many people from an aerial view, without a clear definition of their bodies, probably presenting the non-personification/identification of those who feel the consequences of global warming.

Similarly to previous productions, the image is also used to make visible the topics approached in the diagnosis done by IPCC, mainly on the socioeconomic dimensions of climate changes. Possibly, by using images of cities and the high human density in these places (through the undistinguished bodies), this discourse aims to highlight that the great urban centers simultaneously influence climate changes and suffer their consequences.

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http://dx.doi.org/10.1590/1980-6248-2017-0172

A visual education is basically produced and presented in two ways in this statement: on one, we see the interest in highlighting the possible changes on the lives of traditional peoples directly affected by climate alterations and, because of that, forced to adapt to the circumstances; on the other, emphasize characteristics of an urban way of life which contributes to possible negative impacts and that could be altered by a different idea of socioeconomic development.

We can see the coexistence of two discourse when dealing with the consequences of global warming on humans. Such discourses produce and present people in different ways, depending on where they live, but which, in the discursive construction on the phenomenon, would be interconnected through the production of ideas, such as the preservation of cultural elements. Communities considered traditional are presented as innocent and pure, directly dependent on the care of urbanized societies so preserve their ways of life from the temperature increase.

Besides the risks this event would entail, such as global effects and significant landscape alterations due to climate changes, seen in the previous items, the discourses on global warming are also produced and presented as a frightening perspective that would distinctly affect different populations. Non-urban populations would probably be more affected, not only by the landscape and temperature changes, but also their cultures and ways of life. According to these images, such populations should count on the direct efforts and support of urban societies to, after been properly informed on such problems, grasp new ways of saving and keeping their habits and ways of living.

Final remarks

The images on the report covers are commonly presented with no indication of authorship, date, or geographical position. The frames point to sunsets, glaciers, plantations, floods, etc., as if all these events were planetary, that is, as if they could take place anywhere in the world, anytime, with no limitations that could relativize the validity and truth of its propositions.

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e-ISSN 1980-6248
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On the report covers the key is to show a discourse that goes straight to the point: tell the population some content produced in scientific discussion on various countries and power instances on the threats that global warming will fatally cause, more intensively to certain populations than others, as well as solutions that can mitigate those effects. Factors such as temperature increase, glacier melting, and other climate alterations are produced by images to support and communicate data raised by scientific research, even if through other languages, aiming to reach a higher number of subjects. It is as if images were given the status to concentrate the reality on global warming. There is a certain proximity with scientific knowledge because the content transmitted come from debates in the area, but, at the same time, there is a distancing of this discursive form when using other languages, such as images (in this case, maps and photos), involving drama and emotion. There are also references to other well-established statements, as the use of certain colors or natural environments associated to high temperatures.

With those resources, the involvement of the populations can be more intense, convincing them on the truthiness of this discourse and to the risks they would be exposed. Consequently, through the great fear created, there can be a support to the solutions presented to decrease such environmental problems. All this can be favored by the statements presented on the report covers, by assessing and controlling the emotion discourse and the reconstruction of scientific concepts. Such process points to the pedagogical potential of these statements, as the reader can understand concepts, position themselves, and socially act to answer to the problems and solutions presented in the discourses here analyzed.

The analysis made shows how discourses establish realities, after all, *discursus* is originally the action to run about, comings and goings, *démarches,* intrigues, and spaces are webs, weaves, networks, 'un-entanglements', of images and words braided on social relations" (Albuquerque, 2011, p. 34). The visual and written statements on the covers of IPCC reports work as institutional actions and, in this sense, "discourses do not state themselves, from an external and objectively determined space, they inscribe themselves their own spaces, that produce and presuppose them to legitimate themselves" (Albuquerque, 2011, p. 34).

pro-posições
e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

References

Albuquerque, D. M., Jr. (2011). *A invenção do Nordeste e outras artes* (5a ed.). São Paulo: Cortez. (English version available: The invention of the Brazilian northeast. translation Jerry Dennis Metz. Durham (USA): Duke University Press, 2014.)

Antunes, D. M. M. (2016). *Ecoturismo e produção de identidades: uma análise foucaultiana de discursos midiáticos*. Dissertação de Mestrado, Universidade de São Paulo, São Paulo.

A Educação pelas Imagens e suas Geografias. (2009, setembro/dezembro). *Pro-Posições*, *20*(3).

Braga, A. A., & Cazetta, V. (2012). Imagens sobre aquecimento global em websites ambientais: notas sobre a educação visual acerca da clássica relação sociedade e natureza. *Geograficidade*, *2* (Especial), 42-53.

Brandão, C. R., & Borges, M. C. (2012). O lugar da vida: comunidade e comunidade tradicional. *Campo-Território*, *9*(18), 1-23.

Cazetta, V., & Oliveira, W. M., Jr. (2013). *Grafias do espaço: imagens da educação geográfica contemporânea*. Campinas: Alínea.

Coménio, J. A. (1996). *Didáctica Magna: tratado da arte universal de ensinar tudo a todos* (J. F. Gomes, trad., 4a ed.). Lisboa: Fundação Calouste Gulbenkian. (Obra original publicada em 1649)

Educação pelas Imagens e suas Geografias (2012). *Geograficidade*, *2*.

Ferraz, C. B. O., & Nunes, F. G. (2013). *Imagens, geografias e educação: intenções, dispersões e articulações*. Dourados: Editora da UFGD.

Ferreira, G. M. L. (2010). *Atlas geográfico: espaço mundial* (3a ed.). São Paulo: Moderna.

Foucault, M. (2004). *A ordem do discurso* (L. F. A. Sampaio, trad., 11a ed.). São Paulo: Loyola (Obra original publicada em 1971)

Foucault, M. (2006). Poder e saber. In *Estratégia, poder-saber* (V. L. A. Ribeiro, trad., 2a ed., pp. 223-240). Rio de Janeiro: Forense Universitária.

Foucault, M. (2012). *A arqueologia do saber* (L. F. B. Neves, trad., 8a ed.). Rio de Janeiro: Forense Universitária. (Obra original publicada em 1969)

Imagens, Geografias e Educação. (2010). *Educação Temática Digital*, *11*(2).

pro-posições
e-ISSN 1980-6248
http://dx.doi.org/10.1590/1980-6248-2017-0172

Leite, J. C. (2015). Controvérsias na climatologia: o IPCC e o aquecimento global antropogênico. *Scientiae Studia*, *13*(3), 643-677.

Lenzi, M. H. (2016). *A invenção de Florianópolis como cidade turística: discursos, paisagens e relações de poder*. Tese de Doutorado, Universidade de São Paulo, São Paulo.

Mapas Rizomáticos e Novas Cartografias. (2014). *RA'E GA – O Espaço Geográfico em Análise*, *3*.

Massey, D. (2008). *Pelo espaço: uma nova política da espacialidade* (H. P. Maciel, & R. Haesbaert, trad.). Rio de Janeiro: Bertrand Brasil.

Nunes, F. G., & Novaes, I. F. (2017). *Encontros, derivas, rasuras: potências das imagens na educação geográfica*. Uberlândia: Assis.

Oliveira, W. M., Jr. (2009). Grafar o espaço, educar os olhos: rumo a geografias menores. *Pro-Posições*, *20*(3), 17-28.

Paisagens Inundadas: experimentações escolares e(m) imagens. (2013). *Revista Brasileira de Educação em Geografia*, *3*(6).

Ramos, M. B., & Silva, H. (2009). Mudanças climáticas: o trabalho da textualização televisiva em aulas de ciências. In *Anais do VII Encontro Nacional de Pesquisas em Educação em Ciências (ENPEC)*. Universidade Federal de Santa Catarina, Florianópolis. Recuperado de http://posgrad.fae.ufmg.br/posgrad/viienpec/pdfs/1652.pdf

Ribeiro, W. C. (2008). Políticas públicas ambientais no Brasil: mitigação das mudanças climáticas. Diez años de cambios en el Mundo, en la Geografía y en las Ciencias Sociales, 1999-2008. In *Actas del X Coloquio Internacional de Geocrítica*, Universidad de Barcelona, Barcelona. Recuperado de http://www.ub.es/geocrit/-xcol/377.htm

Sarlo, B. (2014). *A cidade vista: mercadorias e cultura urbana* (M. Stahel, trad.). São Paulo: WMF Martins Fontes.

Sicard, M. (2000). Os paradoxos da imagem. *RUA*, *6*(1), 25-36.

Submitted for evaluation in November 2nd, 2017; accepted for publication in September 3rd, 2018.