

# **The Sustainability Concept in Latin-America Social Theory: Preliminary Thoughts**

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## **Abstract**

Considering the contest that the definition of sustainability places, even by its natural range, it is expected that different views, visions and versions have emerged and been consolidated over the past years. Thus, the concept of sustainability has been widely used within different theoretical approaches and disciplines, often contradictory. This article aims to analyze the concept of sustainability in the Latin American Social Theory, with reference to the database developed for the Project: Environmental Issues, Interdisciplinary, Social Theory and intellectual production in Latin America (FAPESP process 05/52317-1). The Database contains an extensive bibliography and detailed survey of the Brazilian production in the area of Environment and Society, which results from the analysis of books, articles, thesis and dissertations developed at research and graduate centers. In relation to the Latin American countries examined were considered the following centers: FLACSO - Facultad Latinoamericana de Ciencias Sociales and the Instituto de Investigacion y Desarrollo Economico e Social in Argentina, the United Nations Program on the Environment (UNEP) and Universidad Autonoma in Mexico, the Centro Latinoamericano de Ecologia Social (CLAES) in Uruguay; Division de Desarrollo Sostenible y Asentamientos Humanos (UN-CEPAL) in Chile, the UNAL-Universidad Nacional de

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Colombia-Leticia headquarters and Instituto Amazônico de Pesquisa Científica (SINCHI) - Leticia in Colombia and FLACSO - Facultad Latinoamericana de Ciencias Sociales in Ecuador. The different conceptions of sustainability have also been object of study of the research project FAPESP (process 06/61505-9) - Caminhos da Cantareira (Cantareira Paths), with special reference to the relationship between local development, water resources management and sustainability. This work presents a preliminary analysis of the database with a qualitative and a quantitative approach and consultation ended on January 15, 2009. The quantitative analysis was preceded by another moment, where the interest was to analyze how the concept of sustainability has been incorporated by the Latin American Social Theory and the theoretical approaches and traditions to which the material is bound.

**Key words:** environmental issues, sustainability, social theory, interdisciplinary

## 1. Introduction

This article is an analysis of the concept of Sustainability in Latin American Social Theory using as reference the data bank that was specially organized for FAPESP project (process n. 05/52317-1): The Environmental Question, Interdisciplinary, Social Theory and Intellectual Productivity in Latin America (FERREIRA et al, 2006).

Hoeffel & Reis (2008), based on information taken from the data bank up to the February 15, 2008 analysis of sustainability focused on a quantitative study that later led to the development of a quali-quantitative study and the construction of analytic and systematic categories. These categories were elaborated specifically for this article and will be presented in the following topics.

The data bank was also used as methodological support for the project Cantareira Paths - Sustainability and Environmental Perception in the Environmental Protected Area of the Cantareira Dam System - a study of the Atibaia River Watershed (FAPESP Process 06/61505-9). The theoretical focus of this study was the relationship between the concept of sustainability, local development and water resource management. During the project the theme of sustainability was bibliographically researched in the data bank for references, work and research developed in Latin America that could collaborate in the analysis.

As a result of the quantity of problems encountered when trying to define sustainability, and the very magnitude of this subject matter it can only be expected that different positions, visions, versions have arisen and been consolidated over the last years (McLAUGHLIN, 1993; MEADOWS et al. s1993; MACNAGHTEN & URRY, 1998; HAWKEN, 1999; REDCLIFT & WOODGATE, 2000; HUGHES, 2001; BENTON, 2002; HANNIGAN, 2006).

This situation demonstrates how difficult it is to integrate the different visions

environmental thought encompasses and how this heterogeneity appears to be something that affects all those who work with this subject. The multi and interdisciplinary approaches seek to deal with the diversity of the contributions, but the fact remains that there is no one single theory for sustainability and because of the often nearly imperceptible similarities and differences amongst its authors it is almost impossible to elaborate an inventory of all the lines of thought that deal with this subject (BORGES & HOEFFEL, 1999).

Dryzek (2005) and Merchant (2005) emphasize the existence of a diversity of environmental discourses, from the moderate to the more radical and point out that these discussions in some cases complete each other but that most of time are in such competition for hegemony in solving environmental questions that distinct perspectives may be attached to the subject of sustainability.

An analysis that is relevant to sustainability is one that separates these lines of thought in accordance with more radical or more conservative standpoints in relation to environmental problems. As pointed out by certain authors (BENTON, 2002; LIMA, 2003), it is possible to recognize two basic standpoints, one that is revolutionary and considers it is necessary and urgent to adopt a new ecological ethic combined with a drastic redistribution of power and one that is reformist and considers it is necessary to gradually adopt a new model of development that interiorize the sustainability of social and environmental points of view.

These two broad approaches are called by various names and we would like to emphasize the denominations radical ecology and moderate ecology, deep and superficial ecology or tecnocentrism and ecocentrism.

In the analysis made by Ferreira (2006), radical ecology proposes the mobilization of civil society organized to minimize social environmental problems and to develop important reflections around self management, autonomy, decentralization, and at the same time supports alternatives to industrialized medicine, poisoned food and polluting energy sources (FERREIRA, 2006, p.26). The moderate ecologists affirm the inadequacy of the traditional political variables in order to analyze this problem and consider a gradual adoption of a new model of development that interiorize social and environmental sustainability and allow the change over from predatory production systems to sustainable production systems. According to some authors it is necessary to position the social world

within the context of technological capacity and natural resources that include the limits of the environment.

In this way the distinctions between the different approaches to environmental questions and to the concept of sustainability become important not only as an academic approach, as the history of ideas, but also as politics. It becomes a matter of social and environmental sustainability and a discussion that compares different forms of organizing and conducting life.

## **2. Preliminary Quantitative Analysis**

The data bank organized by the Thematic Project FAPESP (process n°05/52317-1): The Question of Environment, Interdisciplinary, Social Theory and Intellectual Production in Latin America includes a wide range Bibliographical Research on Brazilian Intellectual Production in the area of Society and Environment from the analysis of books, articles, thesis and dissertations developed in post graduate research centers. The Latin American centers analyzed are: FLACSO - Latin American College of Social Science and The Institute of Research and Social and Economic Development of Argentina; The United Nations Program on Environment (PNUMA) and the Autonomia University of Mexico; The Latin American Center of Social Ecology (CLAES) in Uruguay; The Division of Sustainable Development and Human Occupation - CEPAL in Chile, and The National University of Colombia, The Leticia Center and The Amazonian Institute of Scientific Research (SINCHI) Leticia, Colombia and FLACSO - Latin American College of Social Sciences in Ecuador.

Research made up to January 15, 2009 for the elaboration of this work showed 536 registers in periodicals, thesis, dissertations and books on the key word Sustainability<sup>5</sup> which is the subject of this analysis. This data does not represent an exact number, but represents the occurrence of the key word Sustainability as one of 3 key words recorded.

From what we see recorded in the data bank the key word Sustainability appears to be centered in Brazilian publications, this is probably due to the fact that Brazilian publications were predominant in the data bank up until the time of analysis, but the study

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<sup>5</sup> The classification and insertion into the data bank used the information that the authors have provided on their papers and were registered up to three (3) keywords for each record.

also showed a relevant production on this theme in the rest of the Latin American countries that were studied. As shown in **Table 1** - 55,1% of production on the theme is Brazilian and 44,9% comes from the rest of Latin American Countries that were analyzed. **Table 2** shows the distribution amongst the rest of Latin American countries and 17% was found in Chile followed by Mexico with 11,0%.

**Table 1. Distribution by Origin of Production**

Origin of Production	Nº	%
Brazilian	295	55,1
The other Latin American Countries Studied	241	44,9
<b>Total</b>	<b>536</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 2. Distribution of Production by Country**

Country	Nº	%
Argentina	32	5,9
<b>Brasil</b>	<b>295</b>	<b>55,1</b>
<b>Chile</b>	<b>93</b>	<b>17,4</b>
Colombia	6	1,1
Costa Rica	3	0,55
Equador	3	0,55
<b>México</b>	<b>59</b>	<b>11,0</b>
Peru	1	0,18
Venezuela	17	3,2
Uruguai	23	4,2
Other countries	4	0,74
<b>Total</b>	<b>536</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 3** shows a distribution in the production on Sustainability from Institutions and Journals that are part of the analysis<sup>6</sup>. These Institutions and Journals are from both Brazil and the rest of Latin American countries studied. The total data that has been fed into the bank up until now shows this theme mainly distributed in the National Gatherings of the Association of Post Graduate Studies and Research on Environment and Society (ANPPAS/Brazil) and in the Journal Environment and Society that published articles from diverse institutions (Ambiente & Sociedade/Brazil) respectively 27,4% and 10,4%. The third greatest production was found in CEPAL - The Economic Commission for Latin America and Caribe (Chile), with 14,1% followed by NAEA/UFPA – The Nucleus of Advanced Amazonian Studies of the Federal University of Para (Brazil), with 4,8% and

PNUMA - The United Nations Program for the Environment (Mexico), with 4,1%. The study shows that the Journal Environment and Society (Ambiente & Sociedade) has published scientific articles from various institutions, especially Brazilian Institutions, on the theme of Sustainability, which showed this theme to be very present and important in Brazilian Environmental Studies.

**Table 3. Publications by Institutions/Journals**

Institution	N° of Publications	%
<b>ANPPAS</b> - Associação Nacional de Pós-Graduação e Pesquisa em Ambiente e Sociedade (Anais/ANPPAS)	<b>147</b>	<b>27,4</b>
Asociación Interciencia – Venezuela	12	2,2
CDS/UNB - Centro de Desenvolvimento Sustentável/UNB	12	2,2
<b>CEPAL</b> – Comissão Econômica para a América Latina e o Caribe	<b>76</b>	<b>14,1</b>
CLACSO – Consejo Latinoamericano de Ciencias Sociales	7	1,4
CLAES – Centro Latino Americano de Ecología Social	18	3,4
FLACSO/EC - Facultad Latinoamericana de Ciencias Sociales/Ecuador	5	0,94
<b>NAEA/UFPA</b> – Núcleo de Altos Estudos Amazônicos da Universidade Federal do Pará	<b>26</b>	<b>4,8</b>
<b>PNUMA</b> - Programa das Nações Unidas para o Meio Ambiente – México	<b>22</b>	<b>4,1</b>
RIDES - Recursos e Investigación para el Desarrollo Sustentable – Chile	12	2,2
SEADE - Sistema Estadual de Análise de Dados	11	2,0
SINCHI – Instituto Amazónico de Investigaciones Científicas – Colômbia	1	0,18
THEOMAI – Argentina	19	3,6
UFPR – Universidade Federal do Paraná	14	2,6
UNAL/LETÍCIA – Universidad Nacional de Colombia	8	1,48
UNAM – Universidad Nacional Autónoma de México	16	2,8
UNICAMP - Universidade Estadual de Campinas (Diversos Centros)	17	3,03
Diverse Institutions – <b>Journal Ambiente &amp; Sociedade</b>	<b>56</b>	<b>10,4</b>
Diverse Institutions and Journals – Argentina	10	1,86
Diverse Institutions and Journals – Brasil	18	3,42
Diverse Institutions and Journals – Chile	3	0,56
Diverse Institutions and Journals – México	11	2,01
Diverse Institutions and Journals – Latin America (Costa Rica, Peru e Venezuela)	7	1,46
Institutions not identified	7	1,4
<b>Total</b>	<b>536</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 4** shows the different associations between the keyword sustainability and the

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<sup>6</sup> In developing this table we sought to identify the main sources of publication and so we chose to present publishing of journals and institutions in the same place.

other key words used. In order to elaborate a table with greater synthesis the first two key words that were recorded were chosen. **Sustainability** shows up alone in **6,5%** of the publications in function of the characteristics and specifics of the material. **Sustainability** shows up associated with the words **Environmentalism and Ecology Discourse** in **8,9%** of the publications. **Amazonian Themes** and **Theoretical/Conceptual Studies** in **6,5%**, **Environmental Economy** in **6,2%**, **Local/Regional Development Projects** in **6,1%**, **Urban Subjects** in **6,0%**, **Agrarian/Agricultural Subjects** in **5,1%**, **Public Policy** in **4,7%**, with **Natural Resources** and **Environmental Projects and Politics** in **4,5%** respectively and **Treaties and International Relations** in **4,1%**. The study shows that this subject presents wide diversity of cross references and that this is a characteristic of this concept.

As already mentioned the study shows that the inter-relationship of the subject with diverse areas of knowledge is an outstanding feature in the data bank and reflects its use in Environmental Studies. In relation to the Project Cantareira Paths (FAPESP 06/61505-9), which focuses on analysis that connects local development, water resource management and sustainability it was observed that these connections represent only 2,2% of the material recorded in the data bank up until now.

**Table 4. Publication by Key Word**

<b>Key Word</b>	<b>N° of Publications</b>	<b>%</b>
<b>Environmentalism and Ecology Discourse, Sustainability</b>	<b>48</b>	<b>8,9</b>
Peasantry, Sustainability	1	0,19
Science and Technology, Sustainability	19	3,6
Communication, Environment, Sustainability	3	0,55
Social Conflicts, Sustainability	11	2,0
Democracy, Sustainability	3	0,55
Social inequality, Sustainability	2	0,39
<b>Environmental Economy, Sustainability</b>	<b>33</b>	<b>6,2</b>
Environmental Education, Sustainability	15	2,8
Studies of social representation, Sustainability	5	0,94
<b>Theoretical/Conceptual Studies, Sustainability</b>	<b>35</b>	<b>6,5</b>
Extrativism, Sustainability	5	0,94
Protected Areas Management, Sustainability	13	2,4
Globalization, Sustainability	14	2,6
Governance, Sustainability	6	1,1
Interdisciplinary, Sustainability	12	2,2
Environmental global changes, Sustainability	8	1,5
World of work, Sustainability	2	0,39
Popular Participation, Sustainability	9	1,7
Urban Planning, Sustainability	1	0,19
<b>Environmental Projects and Politics, Sustainability</b>	<b>24</b>	<b>4,5</b>

<b>Public Policy, Sustainability</b>	<b>25</b>	<b>4,7</b>
Traditional Population, Sustainability	5	0,94
Migratory Processes, Sustainability	2	0,39
<b>Local/Regional Development Projects, Sustainability</b>	<b>33</b>	<b>6,1</b>
Quality of life and risk, Sustainability	5	0,94
Water Resources, Sustainability	12	2,2
<b>Natural Resources, Sustainability</b>	<b>24</b>	<b>4,5</b>
Public Health, Sustainability	2	0,39
<b>Sustainability</b>	<b>35</b>	<b>6,5</b>
<b>Agrarian/Agricultural Subjects, Sustainability</b>	<b>27</b>	<b>5,1</b>
<b>Amazonian Themes, Sustainability</b>	<b>35</b>	<b>6,5</b>
<b>Urban Subjects, Sustainability</b>	<b>32</b>	<b>6,0</b>
<b>Treaties and International Relations, Sustainability</b>	<b>22</b>	<b>4,1</b>
Tourism and ecotourism, Sustainability	8	1,5
<b>Total</b>	<b>536</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 5** presents the production on sustainability by type of production. Articles predominate (74,8%), followed by books (15,2%), Dissertations and Thesis (6,6%) and chapters from books (3,4%).

**Table 5. Registers on Sustainability by Type of Production**

<b>Type of Production</b>	<b>N°</b>	<b>%</b>
Chapters from books	18	3,4
Articles	401	74,8
Dissertations and Thesis	35	6,6
Books	82	15,2
<b>Total</b>	<b>536</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

In **table 6** we find the distribution of articles using the key word **Sustainability** in the work groups at the National Gatherings of the Association of Post Graduate Studies and Research on Society and the Environment – ANPPAS, during the period of 2002 to 2008. The study shows that this term was or is present in 17 of the work groups. This shows the presence of environmental studies about this subject and its inter relationships with various areas of knowledge, the same as was observed in **Table 4** - publications by key word. The most represented groups are **Theory and the Environment** and **Local Knowledge and the Environment** **13,6%** and **12,2%** respectively; **Agriculture, Risks and Environmental Conflicts** with **8,8%**, **Environment, Society and Education** with **7,5%** and **Cities and Sustainability** and **Community Management of Natural Resources** with **6,8 %** each. The study also shows that in relation to analysis of the Project Cantareira Paths (FAPESP 06/61505-9), the keyword sustainability shows up in the works of the work group that

focuses specifically on water resources in only 3,4 % of the material recorded up until now in the data bank.

**Table 6. Articles by Work Groups from National Gatherings of ANPPAS**

Work Groups	Nº of Publications	%
<b>Agriculture, Risks and Environmental Conflicts</b>	<b>13</b>	<b>8,8</b>
<b>Cities and Sustainability</b>	<b>10</b>	<b>6,8</b>
Conflicts related with natural resources uses	9	6,1
<b>Local Knowledge and the environment</b>	<b>18</b>	<b>12,2</b>
Energy and the environment	6	4,1
History, society and the environment in Brasil	6	4,1
Environmental Justice, social conflict and inequality	2	1,4
<b>Community Management of Natural Resources</b>	<b>10</b>	<b>6,8</b>
Built environment	5	3,4
<b>Environment, Society and Education</b>	<b>11</b>	<b>7,5</b>
Modernity, risks e the environment	9	6,1
Nature, technique and violence	7	4,8
Water Resources: social actors, management and territoriality	5	3,4
International Relationship and the environment	4	2,7
Health and the environment	7	4,8
<b>Theory and the Environment</b>	<b>20</b>	<b>13,6</b>
Tourism, the environment and society	5	3,4
<b>Total</b>	<b>147</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

### 3. Qualitative Analysis – Theoretical Approaches

Under this topic we present the theoretical approaches of the most numerous recorded articles relevant to sustainability found in the data bank up to January 15, 2009 from the Centers, Journals and Publications that were analyzed. Data on Brazilian Publications presented the following, analysis of the National Gatherings of Post Graduate Association and Research on the Environment and Society (ANPPAS), represented 27,4% of the production, the Journal Environment and Society (Ambiente & Sociedade) (articles from diverse institutions) 10,4% and the Nucleus of Advanced Amazonian Study of the Federal University of Pará (Brazil) (NAEA/UFPA) 4,8%. The publications from Chile came from the Economic Commission for Latin America and the Caribbean - CEPAL, 14,1%. Publications from Mexico were from the United Nations Program on the Environment - PNUMA, 4,1%. All together these publications represented 60,8% of the material recorded under the key word Sustainability.

In depth study was done on the theoretical approaches used by writers in their works on sustainability, using as references the conceptions of Herculano (2000), Ferreira (2006)

and Ferreira et al (2006). These authors initially defined 10 theoretical approaches: Interdisciplinary Approach; Durkheim Materialism – Realistic Approach; Marxist Materialism; Post-materialistic; Constructivism or Constructionist; Anthropologic (ethnographic); Theoretical Methodological; Descriptive Quantitative; Systemic and Philosophical Reflection.

From the analysis described in this article 8 theoretical approaches were identified and are presented in the tables below. They are: Interdisciplinary Approach; Durkheim Materialism; Marxist Materialism; Post-materialistic; Constructivism or Constructionist, Theoretical Methodological; Reflexive Modernization and Descriptive Quali-quantitative Analysis (empirical). The approach Reflexive Modernization was added and the Descriptive Qualitative was renamed to Descriptive Quali-quantitative Analysis (empirical) because of the particular characteristics of the articles. These 8 theoretical approaches<sup>7</sup> are defined in the following paragraphs.

While searching for an appropriate definition of each of these approaches we perceived that the discussion on **Interdisciplinary** approach is the object of constant controversy and no consensus has been reached. What can be seen in this debate is that there are two different visions: the first of these comes close to the dialogue amongst scientific disciplines in an attempt to expand disciplinary knowledge as in the case of environmental sociology, which seeks to interact theoretically in determined areas of convergence. The second vision limits itself to the field of thematic research in opposition to the vision of progressive assimilation among disciplines. This vision recognizes disciplinary specificity but adopts a kind of deliberate collaboration within disciplinary knowledge (FLORIANI, 2004). In this work in order to analyze the different conceptions of interdisciplinary approach these discussions elaborated by Leff (2000); Phillippi & Hogan (2000); Floriani (2004); Burstyn (2004); Ferreira (2005); Bateson (1987); Morin (2001) and Novo (2002) were used.

For the **Durkheim Materialist approach**, or realistic, it can be affirmed that Catton & Dunlap (1978a, 1978b, 1980) and Dunlap & Catton (1994) criticized the anthropocentrism of sociological thought, that had disassociated the environmental

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<sup>7</sup> These eight approaches were identified and reviewed by João Luiz Hoeffel and Sônia Regina da Cal Seixas from the definitions of Herculano (2000), Ferreira (2006) and Ferreira et al (2006).

variable, ignoring that this interacts with the rest of the variables contemplated by Sociology. These authors base themselves on surpassing the paradigm of human exceptionalism and supremacy, human separation and independence of nature, to one that includes itself in the physical environment as one of the variables within the social system, providing in this way a more adequate approach for studies on scarcity, the decline of the quality of life and the increase of environmental costs. In this way human beings are seen simply as a species amongst other species, the world is considered finite with physical and biological limitations. Catton & Dunlap, in their approaches seek to maintain themselves within the legacy of Durkheim, which explains the social by the social without falling into psychological or physical reductionism or biological determinism.

The **Marxist Materialist approach** may be exemplified in the works of Schnaiberg & Gould (2000) and O'Connor (1994). For Schnaiberg & Gould, there are dialectics and a contradiction between ecosystems (the environment) and human society, that have different dynamics: on one side the treadmill of production is its economic expansion, the relation of intensive production of capital dislocating work, multinationals pressuring for infrastructure, unions pressuring for work and for normalization of relations; and on the other hand, the environmental disruption that results from these contradictory imperatives poorly confronted by the State and that lead to a synthesis of planned scarcity. Schnaiberg applies the concepts of Sociology and Marxist Political Economy to the understanding of environmental questions. In accordance with this approach the proposal of the so called appropriate technologies would be nothing but a new utopia. Other efforts of a Marxist base are cited by Buttel (1987) to connect in causal form capitalist development and the phenomena of environmental degradation in order to explain the appearance of the importance of environmental movements, as for example the analysis by Gorz (1980) about post industrial capitalism, in which new social movements take the place of the working class.

In relation to the **Post Materialistic Approach**, Inglehart (1997) analyzed that the abundance of material goods in contemporary society makes them less valuable than intellectual satisfaction, morals and esthetics, and that's why questions such as peace, feminism, human rights, and quality of life join with the environmental question as elements that are more urgent than class conflicts. In the field of left wing anarchists, the

works of Bookchin (1988) and of Guattari (1990) have also emphasized anti-capitalist analysis. Guattari presents *ecosofia* (ecology of the visible, social formations and subjectivity) and envisions the joining of environmental ecology, social ecology and mental ecology. *Ecosofy* reinvents worker subjectivity through new union practices and politics and new alliances in the workers movement with the feminist and ecological movements.

The **Constructivist or Constructionist Approach** emphasizes a space of multiple realities and defends the right of interpretations and knowledge of diverse social players to be taken into consideration. In this way the perception of the risks provoked the questioning of science and technology, bringing the constructivist view present in both research on vulnerable communities that neighbor areas where waste is dumped (BULLARD & WRIGHT, 1991), while in research about building the right of communities to refuse construction projects of great impact such as roads (BURNINGHAM, 1993). The constructivist vision also presents itself in the study of scientific formulations that give basis to political choices for directing environmental questions (HANNIGAN, 2006; YEARLEY, 1996).

As far as the **Reflexive Modernization Approach**, it presents two lines of thought: the risk society (BECK, 1999) and ecological modernization (MOL, 1997). Despite the differences between these two lines of thought as far as the application of the concept of reflexive modernization, at least the two premises are shared by them: environmental problems are not structurally determined (by capitalism or by industrialism) and progressive modernization of societies may resolve environmental problems (MOL, SPAARGAREN & BUTTEL, 2000). Meanwhile ecological modernization emphasizes the importance of the dynamic of the economy and the market in ecological reform and the role of entrepreneurs and other economic players as social drivers of ecological restructuring (in addition to the State and new social movements). With respect to social movements, these should abandon their role as critics of the development striven for by ecological modernization for environmental restructuring adopted by the State, science, technology and the market. Its greatest contribution will be the power and ability to generate alternative and innovative ideas, mobilize consumers, and organize support or disapproval of public and private initiatives, cooperating with players committed to environmental reform.

Last of all are the **Theoretical-methodological Approach** that refer to analysis

coming from different theoretical references that seek to promote new perspectives for analyzing sustainability (included in this category are studies about indicators and the general analysis about the forming of public policy) and the so called **Quali-quantitative Descriptive Analysis (Empirical)** presents articles with this approach that come out of problems and questions observed in empirical research (case studies), that don't represent a specific concern with models and rigid theoretical definitions but instead promote the practical use of concepts as in the example of analysis of the implantation of indicators and public policies that have as a goal sustainable models.

It seems that this analytical view of production allows an important bit about the theme in question. It is very clear and evident that the theme sustainability is among extremely current questioning that ranges from the necessity of the reconstruction of contemporary society to reflections about the human dimension and its needs and values.

In **Table 7** theoretical approaches of work presented at the ANPPAS gatherings are presented and these correspond to 27,4% of the Latin American production recorded in the Data Bank. The availability of practically all of the articles presented in these events makes possible a broad analysis of Brazilian production. The 147 articles presented at ANPPAS contain a multiplicity of approaches and theoretical links. A distribution of the work presented in the data bank among the 8 theoretical approaches was noted, the most significant of these being **Descriptive Quali-quantitative Analysis (empirical)** with **34,7%**; **Theoretical Methodological** with **19,7%**; **Interdisciplinary** with **17,7%** and **Post-Materialistic** with **12,2%**.

**Table 7 – Theoretical Approaches – ANPPAS**

Approaches	Nº of Publications	%
Durkheim Materialism - Realistic	1	0,7
Marxist Materialism	4	2,7
<b>Post-Materialistic</b>	<b>18</b>	<b>12,2</b>
Constructivism or Constructionist	3	2,1
<b>Theoretical Methodological</b>	<b>29</b>	<b>19,7</b>
<b>Interdisciplinary</b>	<b>26</b>	<b>17,7</b>
Reflexive Modernization	6	4,1
<b>Descriptive Quali-Quantitative Analysis (empirical)</b>	<b>51</b>	<b>34,7</b>
Articles not available	9	6,1
<b>TOTAL</b>	<b>147</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 8** presents the theoretical approaches utilized by the authors with articles

published in the **Journal Environment and Society** (Ambiente & Sociedade) and these correspond to 10,4% of Latin American production recorded in the data bank. The articles demonstrate the same multiplicity of theoretical links as the Gatherings of ANPPAS with a distribution among the 8 theoretical approaches defined, the most significant being **Interdisciplinary** with **28,6%**, **Methodological Theoretical** with **23,2%** and **Descriptive Quali-Quantitative Analysis (empirical)** with **21,5%**.

**Table 8 – Theoretical Approaches - Journal Environment & Society (Ambiente & Sociedade)**

<b>Approaches</b>	<b>N° of Publications</b>	<b>%</b>
Durkheim Materialism - Realistic	2	3,6
Marxist Materialism	3	5,3
Post-Materialistic	2	3,6
Constructivism or Constructionist	5	8,9
<b>Theoretical Methodological</b>	<b>13</b>	<b>23,2</b>
<b>Interdisciplinary</b>	<b>16</b>	<b>28,6</b>
Reflexive Modernization	3	5,3
<b>Descriptive Quali-Quantitative Analysis (Empirical)</b>	<b>12</b>	<b>21,5</b>
Articles not available	0	0
<b>TOTAL</b>	<b>56</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 9** presents the theoretical approaches utilized by the authors with articles published by the **Nucleus of Advanced Amazonian Studies of the Federal University of Para** (Núcleo de Altos Estudos Amazônicos da Universidade Federal do Pará – NAEA/UFPA), and these correspond to 10,4% of Latin American production recorded in the data bank. For the 26 texts registered, the most significant theoretical approaches are **Descriptive Quali-Quantitative Analysis (empirical)** with **30,8%** and **Methodological Theoretical** with **26,9%**.

**Table 9 – Theoretical Approaches - Núcleo de Altos Estudos Amazônicos da Universidade Federal do Pará - NAEA/UFPA**

<b>Approaches</b>	<b>N° of Publications</b>	<b>%</b>
Durkheim Materialism - Realistic	-	0
Marxist Materialism	-	0
Post-Materialistic	-	0
Constructivism or Constructionist	-	0
<b>Theoretical Methodological</b>	<b>7</b>	<b>26,9</b>
Interdisciplinary	2	7,7
Reflexive Modernization	2	7,7
<b>Descriptive Quali-Quantitative Analysis (Empirical)</b>	<b>8</b>	<b>30,8</b>
<b>Articles not available</b>	<b>7</b>	<b>26,9</b>
<b>TOTAL</b>	<b>26</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 10** presents the theoretical approaches utilized by authors with work published by the **Economic Commission for Latin America and the Caribbean - CEPAL**, corresponding to 14,1% of production in Latin America recorded in the Data Bank. It can be seen that the most significant are **Methodological Theoretical** with **46,1 %**, **Descriptive Quali-Quantitative Analysis (empirical)** with **25,0%** and **Post-Materialistic** with **13,1 %**.

**Table 10 – CEPAL**

<b>Approaches</b>	<b>N° of Publications</b>	<b>%</b>
Durkheim Materialism - Realistic	-	0
Marxist Materialism	1	1,3
<b>Post-Materialistic</b>	<b>10</b>	<b>13,1</b>
Constructivism or Constructionist	-	0
<b>Theoretical Methodological</b>	<b>35</b>	<b>46,1</b>
Interdisciplinary	-	0
Reflexive Modernization	2	2,6
<b>Descriptive Quali-Quantitative Analysis (Empirical)</b>	<b>19</b>	<b>25,0</b>
Articles not available	9	11,9
<b>TOTAL</b>	<b>76</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

**Table 11** presents the theoretical approaches utilized in the work published by the **The United Nations Program for the Environment- PNUMA**, with 4,1% of Latin American Production recorded in the Data Bank. The most significant shown are **Post-Materialistic** with **40,9%** and **Theoretical-methodological** with **32,0 %**.

**Table 11 – PNUMA**

<b>Approaches</b>	<b>N° of Publications</b>	<b>%</b>
Durkheim materialism - Realistic	-	0
Marxist Materialism	-	0
<b>Post-materialistic</b>	<b>9</b>	<b>40,9</b>
Constructivism or Constructionist	-	0
<b>Theoretical Methodological</b>	<b>7</b>	<b>32,0</b>
Interdisciplinary	3	13,6
Reflexive modernization	2	9,0
Descriptive Quali-Quantitative Analysis (Empirical)	-	0
Articles not available	1	4,5
<b>TOTAL</b>	<b>22</b>	<b>100</b>

Source: own elaboration from the consultation of the Database.

In relation to the results presented in **Table 07 to 11** it is important to point out the presence of the **Theoretical-methodological approach**. This approach expresses concern

with the formulation, application and comparison of indicators and public policy related to sustainability on both a broad scale as in the case of CEPAL and of PNUMA in the elaboration of references for Latin America and Latin American countries and on a more theoretical scale and in some cases for regional realities as presented in the works of ANPPAS, and in the Journal Environment and Society (Ambiente & Sociedade) and in NAEA/UFPA.

The **Descriptive Quali-quantitative Analysis (empirical)**, presented in **tables 07 to 10**, demonstrates the authors significant interest in the theme sustainability in empirical research and case studies. Analysis of the material affirms that this interest is directly associated with the possible contributions the theme offers not only to the understanding of social research realities but in some ways may collaborate with the implantation and evaluation of regional and local public policy as well as offering indicators of sustainability.

The **Post-materialistic Approach** found especially in the works of ANPPAS, CEPAL and PNUMA, reflect a concern with ethic and philosophical aspects of the environmental question and sustainability that are close to some elements of Radical Ecology (DRYZEK, 2005; MERCHANT, 2005). The relevant presence of the **Interdisciplinary Approach** in the work of ANPPAS and the Journal Environment and Society (Ambiente & Sociedade) reflects the nature of both the gatherings and the journal and shows the concern of the authors with the development of more integrated work and that establish a interdisciplinary dialogue in the analysis of sustainability and environmental problems.

It is relevant to point out that the data obtained from the analysis of the theoretical approaches linked to Sustainability reinforces the perspective that this theme has a great number of possibilities and theoretical methodological links.

#### **4. Some Considerations**

The goal of the survey of the various approaches on thought around sustainability has been to broaden knowledge on this theme and not to carry on analysis that exhausts all of the ramifications, possibilities and positions that this concept makes possible.

There are some approaches that may not have been emphasized and this should not be interpreted as an indication of their irrelevance but should be seen as an indicator of the

amplitude, scope and complexity of these questions. The fact is that the concern of so many institutions and individuals in the search for a sustainable society (with all of the ambiguity this concept holds), creates the necessity for all discussion to remain permanently open and unfinished.

Another important aspect is that the data bank, although needing constant monitoring and improvement, has shown itself to be an extremely important research tool. Despite the relevance to this theme, from the perspective of the Project Cantareira Paths (06/61505-9), which focused on the study of the conceptions of sustainability and its relationships with local development and the management of water resources there was much less work present. This observation suggests that perhaps the occurrence of this analysis perspective is limited in Latin America or occurs and exists in Institutions, Gatherings and Journals not yet been contemplated by the Data Bank.

It is hoped that by continuing this work we will be able to correct eventual mistakes and limitations and to broaden the qualitative analysis that was begun here through deepening the study of the theoretical approaches utilized by the authors in the elaboration of work that allows a broad and detailed investigation of a quanti-qualitative character.

Based on this premise this work aims to later evolve into a qualitative analysis of the material entered into the data bank on the theme sustainability, having as possible references the ideas presented by Dryzek (2005) in his work on Environmental Discourses that involves basically four analysis groups - approaches that consider survival of human beings and not humans, of ecosystems and of the planet earth itself; approaches that seek to solve environmental problems; approaches that consider the perspective of Sustainability and approaches of Green Radicalism.

Dryzek (2005) points out some perspectives, discussions and approaches that, according to the author would be adequate within determined parameters and selective analysis to deal with the degree of uncertainty and complexity of environmental questions and that could lead to social learning within different ecological contexts. Among these the author mentions *democratic pragmatism* that involves participatory mechanisms, dialogue between different social players and governing networks; *decentralized approaches of sustainability* that may stimulate local development models; *the proposals of ecological modernization* can result in institutional changes and experiments in democracy and the

*proposals of green radicalism* that stimulate both personal change, in terms of ethic perspectives, consciousness and individual consumption, and political changes that alter institutions and social structures.

When first approaching the ideas and analysis of Dryzek (2005) it is possible to perceive similarities between the theoretical approaches presented by Herculano (2000), Ferreira (2006) and Ferreira et al (2006) utilized in this work and those of the author and to even recognize some of the perspectives cited, at least those in the articles that were analyzed. In this way in some works with Descriptive Quali-quantitative Analysis (empirical), post materialist and interdisciplinary it is possible to observe the presence of participatory mechanisms for confronting environmental problems, decentralized proposals of local development and a concern with changes in social and ethical standpoints, even institutional, in relation to environmental questions. Meanwhile the effective presence of radical theoretical influences, like those elaborated by green radicalism and radical ecology are still reduced and we perceive the influence of more moderate models such as for example proposals that emphasize essentially the participation of specialists, without stimulating participation of citizens in the formulation of public policy and the resolution of social environmental problems.

In this way despite the analysis being preliminary in relation to the objectives of this text, it is clearly evident that the problem of sustainability is well within extremely current and essential questioning and debates and ranges from the need to rebuild contemporary society to reflections on the human dimension itself and the creation and management of environmental problems in a way that ensures the possibility of the existence of a future sustainable society.

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