Escrevendo escritores (o caso Beta Writer)

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SCHOENENBERGER, Henning. 2019. Introduction. In: Beta Writer. *Lithium-ion batteries: a machine-generated summary on current research*. Heidelberg: Springer, pp. v-x.

LIVRO "ESCRITO" POR COMPUTADOR

> [This book] is the first machine-generated research book. This book […] has the potential to start a new era in scientific publishing. With the exception of this preface it has been created by an algorithm on the basis of a re-combined accumulation and summarization of relevant content in the area of Chemistry and Materials Science. (Schoenenberger 2019:v)

O "PROBLEMA" DO AUTOR

> Who is the originator of machine-generated content? Can developers of the algorithms be seen as authors? Or is it the person who starts with the initial input (such as "Lithium-Ion Batteries" as a term) and tunes the various parameters? Is there a designated originator at all? Who decides what a machine is supposed to generate in the first place? Who is accountable for machine-generated content from an ethical point of view? (Schoenenberger 2019:vii)

> [W]what does all this mean for the role of the scientific author? We foresee that in future there will be a wide range of options to create content—from entirely human-created content to a variety of blended man-machine text generation to entirely machine-generated text. We do not expect that authors will be replaced by algorithms. On the contrary, we expect that the role of researchers and authors will remain important, but will substantially change as more and more research content is created by algorithms. To a degree, this development is not that different from automation in manufacturing over the past centuries which has often resulted in a decrease of manufacturers and an increase of designers at the same time. Perhaps the future of scientific content creation will show a similar decrease of writers and an increase of text designers or, as Ross Goodwin puts it, writers of writers: "When we teach computers to write, the computers don't replace us any more than pianos replace pianists—in a certain way, they become our pens, and we become more than writers. We become writers of writers." (Schoenenberger 2019:ix)

O "PROBLEMA" DO EDITOR

> How will the publication of machine-generated content impact our role as a research publisher? (Schoenenberger 2019:viii)

O TEXTO "NÃO FOI EDITADO"

> Truly, we have succeeded in developing a first prototype which also shows that there is still a long way to go: the extractive summarization of large text corpora is still imperfect, and paraphrased texts, syntax and phrase association still seem clunky at times. However, we clearly decided not to manually polish or copy-edit any of the texts due to the fact that we want to highlight the current status and remaining boundaries of machine-generated content. (Schoenenberger 2019:viii)

"AINDA" PRECISAMOS DE HUMANOS

> [W]e still think that for the foreseeable future we will need a robust human review process for machine-generated text. (Schoenenberger 2019:ix)

AUMENTANDO A "EFICIÊNCIA" DA HUMANIDADE

> We do join Zackaray Thoutt's enthusiasm who indicates that "technology is finally on the cusp of breaking through the barrier between interesting toy projects and legitimate software that can dramatically increase the efficiency of humankind." (Schoenenberger 2019:x)

QUEM É "PAR" DA MÁQUINA?

> The term peer itself indicates a certain inadequacy for machine-generated research content. Who are the peers in this context? Would you as a human reader consider yourself as peer to a machine? And should an expert in a specific research field become an expert of neural networks and Natural Language Processing as well in order to be able to evaluate the quality of a text and the related research? (Schoenenberger 2019:ix)

CHIARCOS, Christian; SCHENK, Niko. 2019. Book generation system pipeline. In: Beta Writer. *Lithium-ion batteries: a machine-generated summary on current research*. Heidelberg: Springer, pp. x-xxiiii.

ESTRUTURAR O NÃO-ESTRUTURADO

> Automatically generating a structured book from a largely unstructured collection of scientific publications poses a great challenge to a computer which we approach with state-of-the-art Natural Language Processing (NLP) and Machine Learning techniques. (Chiarcos e Schenk 2019:x)

ABORDAGEM "CONSERVADORA"

> As creators and consumers of scientific publications tend to value correctness over style, we eventually decided for a relatively conservative approach, a workflow based on […] 1. document clustering and ordering, […] 2. extractive summarization, and […] 3. paraphrasing of the generated extracts. (Chiarcos e Schenk 2019:xi)

> Guided by subject matter experts on chemistry and social sciences, we eventually went for a conservative approach to book generation, in that as much information is preserved from the original as possible. (Chiarcos e Schenk 2019:xxiii)

HUMAN FEEDBACK – AND HUMAN FEEDBACK ONLY

> we designed a workflow according to the premise to preserve as much as possible from the original text—while still producing readable, factually correct, compact, and, of course, novel descriptions. The interested reader may decide to what extent we achieved this goal, but more importantly, let us know where we failed, as it is human feedback—and human feedback only—that can improve the advance of artificial authoring (Chiarcos e Schenk 2019:xi)

PALAVRAS-CHAVE INVESTIGADAS

> In the present volume this includes, e.g., any realization of "li-ion battery", "lithium-ion batteries", etc. and all occurrences containing "anode" and/or "cathode" as found in either article, chapter, book titles or document meta data. (Chiarcos e Schenk 2019:xiii; nota 3)

APESAR DE ESPECIALISTAS TEREM MEXIDO NO TEXTO, ELES TENTAM ARGUMENTAR QUE ELE AINDA É AUTOMÁTICO…

> Even though the structure generation for the manuscript is fully automated, here, a number of parameter values can be set and tuned by the human expert who uses the program, such as the desired number of chapters (i.e., cluster prototypes) and sections, as well as the number of document assignments per section. The result of this process is a structured table of content, i.e., a manuscript skeleton in which pointers to single publications serve as placeholder for the subsequent text. […] At this level, subject matter experts requested the possibility for manual refinement of the automatically generated structure. We permit publications to be

moved or exchanged between chapters or sections, or even removed if necessary, for example, if they seem thematically unrelated according to the domain expertise of the editor. We consider the resulting publication nevertheless to be machine-generated, as such measures to refine an existing structure are comparable to interactions between editors of collected volumes and contributing authors, e.g., during the creation of reference works. (Chiarcos e Schenk 2019:xiv-v)

> For the present volume, 9 documents have been moved between chapters, and 8 documents were excluded from the final book. Overall, the generated book is based on 151 distinct publications. (Chiarcos e Schenk 2019:xv; nota 5)

> Apart from the fully automated text generation module, the human user still has influence on the quality of the text, for example by specifying a list of prohibitive synonym replacements, or by setting the thresholds for the replacements. For compiling this volume, we selected among the aforementioned modules and adjusted their respective threshold in accordance with the feedback from subject matter experts. (Chiarcos e Schenk 2019:xix)

NESTE CASO, NÃO MEXERAM NAS PALAVRAS-CHAVE

> Chapter and section headings are represented as a list of automatically generated keywords. Technically, these keywords are the most distinctive linguistic phrases (n-gram features) as obtained as a side-product of the clustering process and are characteristic for a particular chapter/section. Again, human intervention is possible at this stage, for instance, in order to select the most meaningful phrases for the final book. In the present volume, the keywords remained unchanged. (Chiarcos e Schenk 2019:xv)

SUMMARY & CONCLUSION

> The summary length (in words and as a proportion of the original text length) is parameterizable by the human editor who uses the system. The conclusion of the book is built in the same way. The introduction produced in this way is conservative in that it reflects the introductions of the input documents selected for the chapter—both in order and content. (Chiarcos e Schenk 2019:xvi)

> The summary length has been set to either 270 words or 60% of the original text length— depending on which one was shorter. This combined metric handles the trade-off between too lengthy summaries on the one hand, and summaries which contain almost every sentence of the source, on the other (Chiarcos e Schenk 2019:xvi; nota 7)

COMO COPIAR PARECENDO ORIGINAL?

> In order to create text which is not only novel with respect to its arrangement, but also with respect to its formulation, and in order to circumvent issues related to copyright of the original texts, we attempt to reformulate a majority of the sentences as part of the generated book, while trying to preserve their original meaning as best as possible. (Chiarcos e Schenk 2019:xvii)

> More than 96% of all sentences were modified by at least one semantic substitution. Sentence compression was kept in a very conservative mode and removed only a small portion of 0.9% of the tokens. In order to acknowledge the original source, every sentence is coupled with the DOI of its source document. In addition, sentences which were not affected by reformulation, synonym replacements, or sentence compression are marked as literal quotes (1.2% of all sentences). (Chiarcos e Schenk 2019:xix)

O LONGO RABO

> The nasty little details: Last but not least, we have to mention that a great deal of the errors that we are currently facing are due to

> specifics of the domain and the data. The interested reader will immediately spot such apparently obvious errors—with rather obvious solutions. This includes, for example, the occasional use of us, ourselves, this paper etc. which refers back to the original publication but is clearly misplaced in the generated book. The solution to these is a simple replacement rule, the challenge in this solution is the sheer number and the distribution of errors that require a domain-specific solution each, sometimes referred to as 'the long tail'. While we made some efforts to cover such obvious cases, continuous control and refinement of an increasingly elaborate set of repair rules is necessary, and will accompany the subsequent use and development of the Beta Writer. (Chiarcos e Schenk 2019:xxii)

A GRANDE IDEIA

> It is to be noted, however, that users would apparently like to scale freely between different degrees of reduction and reformulation, ranging from literal quotes to complete paraphrases. Our implementation does not provide such an interface, but developing such a tool may be a direction for future extensions. (Chiarcos e Schenk 2019:xix)

> Getting the human in the loop: Error correction can potentially also be covered by a human expert—or, in a book production workflow, as part of copyediting. But even beyond this level of manual meddling with the machine-generated manuscript, a clear, and somewhat unexpected result of our internal discussions with subject matter experts on chemistry and social sciences was that editors would like to maintain a certain level of control. At the moment, the system remains a blackbox to its users, and we manually adjust parameters or (de)select modules according to the feedback we get about the generated text, then re-generate, etc. At the same time, it is impossible to optimize against a gold standard—because such data does not exist. One solution is to provide a user interface that allows a user to switch parameters on the fly and see and evaluate the modifications obtained by this and thus optimize the machine-generated text according to personal preferences, and—also depending on the feedback we elicit on this volume—developing such an interface is a priority for the immediate future. (Chiarcos e Schenk 2019:xxii)

> Another technical challenge that we identified during the creation of this book was that human users aim to remain in control. While an automatically generated book may be a dream come true for providers and consumers of scientific publications (and a nightmare to peer review), advanced interfaces to help users to guide the algorithm, to adjust parameters and to compare their outcomes seem to be necessary to ensure both standards of scientific quality and correctness. (Chiarcos e Schenk 2019:xxiii)

Matéria e sentido (Barad 2007)

Published 27/07/2019 Barad Leave a Comment

BARAD, Karen. 2007. *Meeting the universe halfway: quantum physics and the entanglement of matter and meaning*. Durham: Duke University Press.

IMPORTANTE

> It is important to go slowly and carefully. (Barad 2007:81)

NÃO É POSSÍVEL SEPARAR MATÉRIA E SENTIDO (eles são inextricavelmente ligados)

> Matter and meaning are not separate elements. They are inextricably fused together (Barad 2007:3)

> Even atoms, whose very name, atomos (atomos), means "indivisible" or "uncuttable," can be broken apart. But matter and meaning cannot be dissociated, not by chemical processing, or

centrifuge, or nuclear blast. (Barad 2007:3)

FÍSICA CONTEMPORÂNEA enreda ONTOLOGIA, EPISTEMOLOGIA e ÉTICA

> [C]ontemporary physics makes the inescapable entanglement of matters of being, knowing, and doing, of ontology, epistemology, and ethics, of fact and value, so tangible, so poignant. (Barad 2007:3)

> "Does one as a physicist have the moral right to work on the practical exploitation of atomic energy?" Heisenberg's haunting question to Bohr hangs in the air throughout *Copenhagen*. (Barad 2007:7)

PRINCÍPIO DA INCERTEZA DE HEISENBERG

> Let's look more closely at what Heisenberg's uncertainty principle says. Heisenberg does not say that we can't have any knowledge about a particle's position and momentum; rather, he specifies a trade-off concerning how well we can know both quantities at once: the more we know about a particle's position, the less we know about its momentum, and vice versa. (Barad 2007:7)

> The fact remains that the common public conception of the uncertainty principle is (at best) the epistemic version that Heisenberg himself retracted. But even more unfortu- nate, surely, is the fact that many physics textbooks, physics students, and professional physicists share this misconception. (Barad 2007:118)

INTERPRETAÇÃO DE COPENHAGEN (complementaridade-Bohr e incerteza-Heisenberg)

> Bohr and Heisenberg were two of the great leaders of the quantum revolution in physics. Their respective interpretations of quantum physics—complementarity and uncertainty—constitute the nucleus of the so-called Copenhagen interpretation of quantum mechanics. (Barad 2007:3)

FÍSICA QUÂNTICA

> [Q]uantum theory leads us out of the morass that takes absolutism and relativism to be the only two possibilities. (Barad 2007:18)

> Quantum physics undercuts reductionism as a worldview or universal explanatory framework. (Barad 2007:24)

> Quantum leaps in any case are unavoidable. (Barad 2007:38)

> The epistemological and ontological issues are not circumscribed by the size of Planck's constant. (Barad 2007:69)

> In a sense, to accomplish my task, I need to "rescue" quantum theory from the problematic discourses of both its overzealous advocates and its unreflective practitioners. [...] It is not my intention to contribute to the romanticizing or mysticizing of quantum theory. On the contrary, as a physicist, I am interested in engaging in a rigorous dialogue about particular aspects of specific discourses on quantum physics and their implications. (Barad 2007:67-8)

> According to quantum electrodynamics, the "vacuum" (which, classically speaking, refers to the void) is a state in which everything that can possibly exist exists in some potential form. The lively potentiality of the vacuum creates "vacuum fluctuations," which produce the Lamb shift in the hydrogen spectrum. That Lamb and Retheford were able to measure this tiny shift is remarkable; that there is a possibility of measuring the effects of unrealized possibilities is nothing short of astonishing. Indeed, the Lamb shift constitutes one of the most accurate tests we have of the theory of quantum electrodynamics. (Barad 2007:92)

> *quantum theory exposes an essential failure of representationalism* (Barad 2007:124)

A REVOLUÇÃO DE BOHR (filosofísica, política, ética e mediação técnica, para além dos binarismos) – A Bohrian ontology: phenomena and intra-actions (Barad 2007:125)

> Bohr's ideas reveals that the very notion of causality must be reconsidered, since the traditional conception—which presents only the binary options of free will and determinism—is flawed. But if causality is reworked, then power needs to be rethought. (Power relations cannot be understood as either determining or absent of constraints within a corral that merely limits the free choices of individuals.) Agency needs to be rethought. Ethics needs to be rethought. Science needs to be rethought. Indeed, taking Bohr's interpretation seriously calls for a reworking of the very terms of the question about the relationship between science and ethics. Even beyond that, it undermines the metaphysics of individualism and calls for a rethinking of the very nature of knowledge and being. It may not be too much of an exaggeration to say that every aspect of how we understand the world, including ourselves, is changed. (Barad 2007:23)

> In this book I offer a rigorous examination and elaboration of the implications of Bohr's philosophy-physics (physics and philosophy were one practice for him, not two). (Barad 2007:24)

> Bohr's philosophy-physics is a particularly apt starting point for thinking the natural and social worlds together and gaining some important clues about how to theorize the nature of the relationship between them, since his investigations of quantum physics open up questions not only about the nature of nature but also about the nature of scientific and other social practices. In particular, Bohr's naturalist commitment to understanding both the nature of nature and the nature of science according to what our best scientific theories tell us led him to what he took to be the heart of the lesson of quantum physics: *we are a part of that nature that we seek to understand*. Bohr argues that scientific practices must therefore be understood as interactions among component parts of nature and that our ability to understand the world hinges on our taking account of the fact that our knowledge-making practices are social-material enactments that contribute to, and are a part of, the phenomena we describe. (Barad 2007:26)

> Bohr's position that neither the subjects nor the objects of knowledge practices can be taken for granted, and that one must inquire into the material specificities of the apparatuses that help constitute objects and subjects. (Barad 2007:27)

> Bohr's epistemological framework, based on empirical findings in the atomic domain in the early twentieth century, offers a new understanding of fundamental philosophical issues such as the relationship between knower and known, the role of measurement, questions of meaning making and concept use, the conditions for the possibility of objective description, correct identification of the objective referent for measured properties, the nature of causality, and the nature of reality. (Barad 2007:31)

> Bohr understands these issues—concerning word and world—to be inextricably linked. According to Bohr, our ability to understand the physical world hinges on our recognizing that our knowledge-making practices, including the use and testing of scientific concepts, are material enactments that contribute to, and are a part of, the phenomena we describe. (Barad 2007:32)

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> Bohr's view that philosophy is integral to physics (Barad 2007:68)

> [T]*he nature of the observed phenomenon changes with*

corresponding changes in the apparatus. (Barad 2007:106)

> Bohr called into question two fundamental assumptions that support the notion of measurement transparency in Newtonian physics: (1) that the world is composed of individual objects with individually determinate boundaries and properties whose well-defined values can be represented by abstract universal concepts that have determinate meanings independent of the specifics of the experimental practice; and (2) that measurements involve continuous determinable interactions such that the values of the properties obtained can be properly assigned to the premeasurement properties of objects as separate from the agencies of observation. In other words, the assumptions entail a belief in representationalism (the independently determinate existence of words and things), the metaphysics of individualism (that the world is composed of individual entities with individually determinate boundaries and properties), and the intrinsic separability of knower and known (that measurements reveal the preexisting values of the properties of independently existing objects as separate from the measuring agencies). (Barad 2007:107)

> According to Bohr, at the beginning of the twentieth century a crucial empirical fact was discovered that disproves the classical assumption that measurement interactions are continuous. This "essential discontinuity" — or "quantum jump" — characterizes quantum physics. Despite its common colloquial usage to mark a large (discontinuous) change, a quantum jump is not large at all — in fact, the term "quantum" means the smallest quantity or discrete amount that exits. In fact, this essential discontinuity is otherwise known in physics as Planck's constant (after its founder), symbolized by *h*, and it is indeed an extremely small quantity. This idea of an essential discreteness or discontinuous nature was initially introduced by Max Planck in 1900 in his attempt to account for some data on blackbody radiation, which would not yield to classical physics analysis. In particular, he proposed that energy is "quantized" and exchanged in discrete amounts. The fact that *h* =/= 0 (i.e., that the value of Planck's constant is not zero) marks the existence of a fundamental discontinuity of nature. The failure of Newtonian physics to take appropriate account of this discontinuity portends its downfall. (Barad 2007:108)

> Bohr's argument for the indeterminable nature of measurement interactions is based on his insight that *concepts are defined by the circumstances required for their measurement*. That is, *theoretical concepts* are not ideational in character; they *are specific physical arrangements*. For Bohr, measurement and description (the physical and the conceptual) entail each other (not in the weak sense of operationalism but in the sense of their mutual epistemological implication). Bohr argues that because concepts, like "position" and "momentum," for example, are specifically embodied, mutually exclusive experimental arrangements need to be employed simultaneously (which is by definition impossible) to determine all the required features of the measurement interaction. (Barad 2007:109)

> No one would suggest that because atoms are too small to see with the naked eye, we are therefore entitled to deny their existence and their relevance to our everyday lives (although we do at times successfully ignore their existence). The entity in question may be small, but its consequences may be quite profound. This is indeed true of the existence of the fundamental discontinuity. [...] To the best of our knowledge, *h* is a universal *constant*. [...] And this is the point. Bohr's analysis does not depend on the size of *h*, only the fact that it is nonzero. [...] The fact that *h* (Planck's constant) is small relative to the mass of large objects does not mean that Bohr's insights apply only to microscopic objects. It does mean that the effects of the essential discontinuity may be less evident for relatively large objects, but they are *not* zero. To put it another way,

no evidence exists to support the belief that the physical world is divided into two separate domains, each with its own set of physical laws: a microscopic domain governed by the laws of quantum physics, and a macroscopic domain governed by the laws of Newtonian physics. Indeed, quantum mechanics is the most successful and accurate theory in the history of physics, accounting for phenomena over a range of twenty-five orders of magnitude, from the smallest particles of matter to large-scale objects. Quantum physics does not merely supplement Newtonian physics — it supersedes it. The key point is this: Bohr's analysis of the nature of measurement interactions and the epistemological implications of his analysis are completely general (as far as we know). (Barad 2007:110)

> Since observations involve an indeterminable discontinuous interaction, *as a matter of principle, there is no unambiguous way to differentiate between the "object" and the "agencies of observation." No inherent/Cartesian subject-object distinction exists*. [...] *The boundary between the "object of observation" and the "agencies of observation" is indeterminate in the absence of a specific physical arrangement of the apparatus*. What constitutes the object of observation and what constitutes the agencies of observation are determinable only on the condition that the measurement apparatus is specified. *The apparatus enacts a cut delineating the object from the agencies of observation*. Clearly, then, as we have noted, *observations do not refer to properties of observation-independent objects (since they don't preexist as such)*. (Barad 2007:114)

> Abraham Pais [...] wrote that "Einstein once remarked of Bohr, 'He utters his opinions like one perpetually groping and never like one who believes to be in possession of definite truth'" (Barad 2007:121)

> As I noted from the outset, my aim is not so much to provide a faithful representation of Bohr's philosophy-physics as to propose a consistent framework for thinking about important epistemological and ontological issues. In addressing these issues, it would be just as dishonest to attribute the full development of this framework to Bohr as it would be to deny that my thinking about Bohr's philosophy-physics is everywhere present in my formulation. (Barad 2007:123)

> Bohr's commitment to finding a way to hang on to objectivity in the face of the significant role of "subjective elements" such as human concepts in the production of phenomena underlines his opposition to idealism and relativism. Apparatuses are not Kantian conceptual frameworks; they are physical arrangements. And phenomena do not refer merely to perception of the human mind; rather, phenomena are real physical entities or beings (though not fixed and separately delineated things). Hence I conclude that Bohr's framework is consistent with a particular notion of realism, which is not parasitic on subject-object, culture-nature, and word-world distinctions. (Barad 2007:129)

> As Bohr points out, the inseparability of the object from the apparatus ''entails . . . the necessity of a final renunciation of the classical ideal of causality and a radical revision of our attitude towards the problem of physical reality'' (Bohr 1963b [1949 essay], 59–60). (Barad 2007:129)

> For Bohr, things do not have inherently determinate boundaries or properties, and words do not have inherently determinate meanings. Bohr also calls into question the related Cartesian belief in the inherent distinction between subject and object, and knower and known. Indeed, Bohr's philosophy-physics poses a radical challenge not only to Newtonian physics but also to Cartesian epistemology and its representationalist triadic structure of words, knowers, and things. (Barad 2007:138)

> It might be said that the epistemological framework that Bohr develops rejects both the transparency of language and the transparency of measurement; however, even more fundamentally, it rejects the presupposition that language and measurement perform mediating functions. (Barad 2007:138)

REALISMO AGENCIAL

> I propose "agential realism" as an epistemological-ontological-ethical framework that provides an understanding of the role of human and nonhuman, material and discursive, and natural and cultural factors in scientific and other social-material practices, thereby moving such considerations beyond the well-worn debates that pit constructivism against realism, agency against structure, and idealism against materialism. (Barad 2007:26)

> Chapter 4 is the core chapter of the book. Here I develop my central theoretical framework—agential realism. Agential realism is an epistemological, ontological, and ethical framework that makes explicit the integral nature of these concerns. This framework provides a posthumanist performative account of technoscientific and other naturalcultural practices. (Barad 2007:32)

> [A]gential realism clarifies the nature of the causal relationship between discursive practices and material phenomena. (Barad 2007:34)

> [A]gential realism's reconceptualization of the nature of matter and discursive practices provides a means for taking account of the productive nature of natural as well as cultural forces in the differential materialization of nonhuman as well as human bodies. It thereby avoids the privileging of discursive over material concerns and the reinscription of the nature-culture dualism (Barad 2007:34-5)

> Importantly, agential realism rejects the notion of a correspondence relation between words and things and offers in its stead a causal explanation of how discursive practices are related to material phenomena. It does so by shifting the focus from the nature of representations (scientific and other) to the nature of discursive practices (including technoscientific ones), leaving in its wake the entire irrelevant debate between traditional forms of realism and social constructivism. Crucial to this theoretical framework is a strong commitment to accounting for the material nature of practices and how they come to matter. (Barad 2007:44-5)

> [A]ccording to agential realism, the analysis of entangled practices requires a nonadditive approach that is attentive to the intra-action of multiple apparatuses of bodily production. (Barad 2007:94)

> There is an important sense in which the only thing that doesn't seem to matter anymore is matter. (Barad 2007:132)

> Crucially, an agential realist elaboration of performativity allows matter its due as an active participant in the world's becoming, in its ongoing intra-activity. And furthermore it provides an understanding of *how* discursive practices matter. (Barad 2007:136)

> [M]*atter is substance in its intra-active becoming — not a thing but a doing, a congealing of agency. Matter is a stabilizing and destabilizing process of iterative intraactivity*. Phenomena — the smallest material units (relational "atoms")— come to matter through this process of ongoing intra-activity. [...] [M]*atter is a dynamic intra-active becoming that is implicated and enfolded in its iterative becoming. Matter(ing) is a dynamic articulation/configuration of the world*. (Barad 2007:151)

> In an agential realist account, *apparatuses are* [...] *dynamic (re)configurings of the world through which bodies are intra-actively materialized*. (Barad 2007:169-70)

ESPELHOS

> Mirrors reflect. To mirror something is to provide an accurate image or representation that faithfully copies that which is being mirrored. Hence mirrors are an often-used metaphor for representationalism and related questions of reflexivity. (Barad 2007:86)

DIFRAÇÃO COMO METODOLOGIA

> I use the terms “diffraction” and “interference” interchangeably. That is, I side with the physicist Richard Feynman and others who drop this distinction on the basis that what is at issue in both cases is the physics of the superposition of waves. (Barad 2007:28-9)

> I use the terms “diffraction” and “interference” interchangeably without granting significance to the historical contingencies by which they have been assigned different names. (Barad 2007:81)

> [I]f the goal is to think the social and the natural together, to take account of *how* both factors matter (not simply to recognize that they both do matter), then we need a method for theorizing the relationship between “the natural” and “the social” together without defining one against the other or holding either nature or culture as the fixed referent for understanding the other. What is needed is a diffraction apparatus to study these entanglements. One way to begin to build the needed apparatus is to use the following approach: to rethink the nature of nature based on our best scientific theories, while rethinking the nature of scientific practices in terms of our best understanding of the nature of nature and our best social theories, while rethinking our best social theories in terms of our best understanding of the nature of nature and the nature of scientific theories. A diffractive methodology provides a way of attending to entanglements in reading important insights and approaches through one another. (Barad 2007:30)

> [T]his book works as a diffraction grating, illuminating important material differences, relationalities, and entanglements in the lively dance of mattering, and it may be difficult to appreciate the intricacies of the pattern that is produced if significant segments of the book are skipped over. (Barad 2007:37)

> As Donna Haraway suggests, diffraction can serve as a useful counterpoint to reflection: both are optical phenomena, but whereas the metaphor of reflection reflects the themes of mirroring and sameness, diffraction is marked by patterns of difference. (Barad 2007:71)

> Haraway’s point is that the methodology of reflexivity mirrors the geometrical optics of reflection, and that for all of the recent emphasis on reflexivity as a critical method of self-positioning it remains caught up in geometries of sameness; by contrast, diffractions are attuned to differences—differences that our knowledge-making practices make and the effects they have on the world. (Barad 2007:72)

> I will argue that there is a deep sense in which we can understand diffraction patterns — as patterns of difference that make a difference — to be the fundamental constituents that make up the world. (Barad 2007:72)

> diffraction is a quantum phenomenon that makes the downfall of classical metaphysics explicit. (Barad 2007:72)

> So at times diffraction phenomena will be an object of investigation and at other times it will serve as an apparatus of investigation; it cannot serve both purposes simultaneously since they are mutually exclusive; nonetheless, as our understanding of the phenomenon is refined we can enfold these insights into further refinements and tunings of our instruments to sharpen our investigations and so on. (Barad 2007:73)

> To summarize, what I am interested in doing is building diffraction apparatuses in order to study the entangled effects differences make. (Barad 2007:73)

> Simply stated, diffraction has to do with the way waves combine when they overlap and the apparent bending and spreading of waves that occurs when waves encounter an obstruction. Diffraction can occur with any kind of wave: for example, water waves, sound waves, and light waves all exhibit diffraction under the right conditions. (Barad 2007:74)

> Surfers know this phenomenon well, since they are sometimes able to catch really nice waves on the other side of a large boulder sitting offshore. That is, they can take advantage of the diffraction patterns created by rocks or pieces of land that stick out near the shore. These surfers are literally riding the diffraction pattern. (Barad 2007:80)

> It has now become routine to use diffraction experiments to determine different features of matter. Generally this works in one of two complementary ways: sometimes the goal of a diffraction experiment is to learn about the nature of the substance that is being passed through a diffraction grating, and sometimes it's to learn about the diffraction grating itself. (Barad 2007:83)

> While reflection has been used as a methodological tool by scholars relying on representationalism, there are good reasons to think that diffraction may serve as a productive model for thinking about nonrepresentationalist methodological approaches. (Barad 2007:88)

> important aspects of diffraction that make it a particularly effective tool for thinking about socialnatural practices in a peformative rather than representationalist mode (Barad 2007:88)

> First and foremost, as Haraway suggests, a diffractive methodology is a critical practice for making a difference in the world. It is a commitment to understanding which differences matter, how they matter, and for whom. It is a critical practice of engagement, not a distance-learning practice of reflecting from afar. The agential realist approach that I offer eschews representationalism and advances a performative understanding of technoscientific and other naturalcultural practices, including different kinds of knowledge-making practices. According to agential realism, knowing, thinking, measuring, theorizing, and observing are material practices of intra-acting within and as part of the world. What do we learn by engaging in such practices? We do not uncover preexisting facts about independently existing things as they exist frozen in time like little statues positioned in the world. Rather, we learn about phenomena — about specific material configurations of the world's becoming. The point is […] to understand and take account of the fact that we too are part of the world's differential becoming. And furthermore, the point is […] that practices of knowing are specific material engagements that participate in (re)configuring the world. Which practices we enact matter — in both senses of the word. Making knowledge is not simply about making facts but about making worlds, or rather, it is about making specific worldly configurations (Barad 2007:90-1)

> The physical phenomenon of diffraction makes manifest the extraordinary liveliness of the world. (Barad 2007:91)

> diffraction gratings can be used to exhibit some of the smallest details of nature (at least the smallest levels that we have successfully explored). For example, diffraction gratings can be used to measure the spectrum of light that is characteristic of each kind of atom. Each atom in the periodic table has a characteristic set of energy states (different "orbits" that the electron can be in), and when an electron "jumps" from a higher energy level to a lower one, it emits light of a corresponding wavelength (e.g., the visible spectrum of hydrogen has a red line, a blue line, and two violet lines). Therefore the light spectrum of an atom indicates its possible energy levels. The differences in energy levels are tiny (we're talking about changes inside an atom). (Barad 2007:91-2)

> When it comes to the “interface” between a coffee mug and a hand, it is not that there are x number of atoms that belong to a hand and y number of atoms that belong to the coffee mug. Furthermore, […] it a well-recognized fact of physical optics that if one looks closely at an “edge,” what one sees is not a sharp boundary between light and dark but rather a series of light and dark bands — that is, a diffraction pattern. (Barad 2007:156)

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FENÔMENO

> the primary ontological unit is not independent objects with independently determinate boundaries and properties but rather what Bohr terms “phenomena.” In my agential realist elaboration, phenomena do not merely mark the epistemological inseparability of observer and observed, or the results of measurements; rather, *phenomena* are the *ontological* inseparability of agentially intra-acting components. […] Significantly, phenomena are not mere laboratory creations but basic units of reality. The shift from a metaphysics of things to phenomena makes an enormous difference in understanding the nature of science and ontological, epistemological, and ethical issues more generally. (Barad 2007:33)

> *Phenomena*, according to my agential realist account, are neither individual entities nor mental impressions, but entangled material agencies […]. The agential realist understanding that I propose is a non- representationalist form of realism that is based on an ontology that does not take for granted the existence of “words” and “things” and an epistemology that does not subscribe to a notion of truth based on their correct correspondence. Agential realism offers the following elaboration of Hacking’s critique of representationalism: *experimenting and theorizing are dynamic practices that play a constitutive role in the production of objects and subjects and matter and meaning*. As I will explain, theorizing and experimenting are not about *intervening* (from outside) but about *intra-acting* from within, and as part of, the phenomena produced. (Barad 2007:56)

> Since there is no inherent distinction between object and instrument, the property measured cannot meaningfully be attributed to either an abstract object or an abstract measuring instrument. That is, the measured value is neither attributable to an observation-independent object, nor is it a property created by the act of measurement […]. My reading is that the *measured properties refer to phenomena*, remembering that the crucial identifying feature of phenomena is that they include “all relevant features of the experimental arrangement.” […] This shift in referentiality is a condition for the possibility of objective knowledge. That is, *a condition for objective knowledge is that the referent is a phenomenon* (and not an observation-independent object). (Barad 2007:56)

> Since individually determinate entities do not exist, measurements do not entail an interaction between separate entities; rather, determinate entities emerge from their intra-action. I introduce the term “intra-action” in recognition of their ontological inseparability, in contrast to the usual “interaction,” which relies on a metaphysics of individualism (in particular, the prior existence of separately determinate entities). *A phenomenon is a specific intra-action of an “object” and the “measuring agencies”*; the object and the measuring agencies emerge from, rather than precede, the intra-action that produces them. Crucially, then, we should understand phenomena not as objects-in-themselves, or as perceived objects (in the Kantian or phenomenological sense), but as specific intra-actions. Because the basis of this ontology is a fundamental inseparability, it cuts across any Kantian noumena-phenomena distinction: there are no determinately bounded or propertied entities existing “behind” or as the causes of phenomena. Not only is this ontological understanding of phenomena consistent with Bohr’s insights; it is also consistent with recent experimental and theoretical developments in quantum physics (see chapter 7). (Barad 2007:128)

> [P]henomena do not merely mark the epistemological inseparability of observer and observed, or the results of measurements; rather, *phenomena are the ontological inseparability/entanglement of intra-acting “agencies.”* That is, phenomena are ontologically primitive relations — relations without preexisting relata. The notion of *intra-action* (in contrast to the usual “interaction,” which presumes the prior existence of independent entities or relata) represents a profound conceptual shift. It is through specific agential intra-actions that the boundaries and properties of the components of phenomena become determinate and that particular concepts (that is, particular material articulations of the world) become meaningful. Intra-actions include the larger material arrangement (i.e., set of material practices) that effects an *agential cut* between “subject” and “object” (in contrast to the more familiar Cartesian cut which takes this distinction for granted). That is, the agential cut enacts a resolution *within* the phenomenon of the inherent ontological (and semantic) indeterminacy. In other words, relata do not preexist relations; rather, relata-within-phenomena emerge through specific intra-actions. Crucially, then, intra-actions enact *agential separability* — the condition of *exteriority-within-phenomena*. The notion of agential separability is of fundamental importance, for in the absence of a classical ontological condition of exteriority between observer and observed, it provides an alternative ontological condition for the possibility of objectivity. Moreover, the agential cut enacts a causal structure among components of a phenomenon in the marking of the “measuring agencies” (“effect”) by the “measured object” (“cause”). It is in this sense that the measurement can be said to express particular facts about that which is measured; that is, the measurement is a causal intra-action and not “any old playing around.” Hence *the notion of intra-action constitutes a reworking of the traditional notion of causality*. (Barad 2007:139-40)

> [P]henomena are not the mere result of laboratory exercises engineered by human subjects; rather, *phenomena are differential patterns of mattering* (“diffraction patterns”) produced through complex agential intra-actions of multiple material-discursive practices or apparatuses of bodily production, where *apparatuses are not mere observing instruments but boundary-drawing practices — specific material (re)configurings of the world — which come to matter*. (Barad 2007:140)

> Reality is composed not of things- in-themselves or things-behind-phenomena but of things-in-phenomena. (Barad 2007:140)

> It is important to keep in mind that Bohr is making a point about the inherent ambiguity of bodily boundaries and the resolution of those boundaries through particular complementary cuts/practices. He is

not making a point about the nature of conscious subjective experience, that is, about phenomena in the phenomenologist's sense. (Barad 2007:155)

> The boundaries and properties of an "object" are determinate only within and as part of a particular phenomenon. Therefore, by the logic of Bohr's own analysis, the boundaries and properties of an apparatus are not well defined outside its determination within a larger phenomenon. (Barad 2007:160)

> Bohr insists that an "unambiguous [i.e., objective] account of proper quantum phenomena must, in principle, include a description of all relevant features of the experimental arrangement" (Bohr 1963c [1958 essay], 4). Now, to determine all its relevant features, it is necessary to characterize the entire experimental apparatus (or at least all the features that are relevant) by involving it within a larger phenomenon. That is, the apparatus that is to be characterized (i.e., measured) must be the "object of observation" within some larger phenomenon involving its intra-action with an auxiliary apparatus. This is necessary so that the "object apparatus" within the larger phenomenon effects its marks on another "part" of the larger phenomenon (which includes the auxiliary apparatus). In other words, to measure its characteristics (as part of a larger phenomenon), the original apparatus in question would have to become the "object" of investigation in its intra-action with an auxiliary apparatus, thereby involving it in some larger phenomenon. Since it is not possible for the apparatus to simultaneously be both measured object and measuring instrument, the apparatus cannot be fully characterized and function according to its ("original") purpose simultaneously. Or to put it another way, any attempt to measure the "original" apparatus's characteristics will require its involvement within a larger phenomenon whereby it is positioned as the object of investigation, thereby excluding its role as an agency of observation. The measurement of the apparatus entails a different phenomenon from the original one, and the connection of the two different phenomena would require a third, yet larger phenomenon entailing these. Hence the "outside" boundary, like the "inside" boundary, is not determinate in the absence of its involvement in a larger phenomenon. In other words, *there are no intrinsic boundaries*, and even what is "inside" and what is "outside" are intrinsically indeterminate. The logic of Bohr's own argument undercuts the conception of the apparatus as a static and bounded laboratory setup and the human as the set designer, interpreter, and spokesperson for the performance of nature. (Barad 2007:160-1)

INTRA-AÇÃO (animismo?)

> The neologism "intra-action" *signifies the mutual constitution of entangled agencies*. That is, in contrast to the usual "interaction," which assumes that there are separate individual agencies that precede their interaction, the notion of intra-action recognizes that distinct agencies do not precede, but rather emerge through, their intra-action. It is important to note that the "distinct" agencies are only distinct in a relational, not an absolute, sense, that is, *agencies are only distinct in relation to their mutual entanglement; they don't exist as individual elements*. [...] Crucially, [...] *the notion of intra-action constitutes a radical reworking of the traditional notion of causality*. [...] A lively new ontology emerges: the world's radical aliveness comes to light in an entirely nontraditional way that reworks the nature of both relationality and aliveness (vitality, dynamism, agency). (Barad 2007:33)

BUTLER

> Butler's conception of materiality is limited by its exclusive focus on human bodies and social factors, which works against her efforts to understand the relationship between materiality and discursivity in their indissociability. (Barad 2007:34)

METAFÍSICA EXPERIMENTAL

> During the past decade, technological progress in experimental physics has opened up an entirely new empirical domain: the world of “experimental metaphysics.” That is, questions previously thought to be a matter solely for philosophical debate have been brought into the orbit of empirical inquiry. This is a striking development because it allows scientists to explore metaphysical issues in the laboratory (Barad 2007:35)

CONTRIBUIÇÕES PARA A FÍSICA

> [M]y project [...] does not merely offer insights about the nature of scientific practices but also makes a constructive contribution to the field of science being studied. That is, my project is not merely a reflection on science but takes these insights about scientific practices and about nature (the two key ingredients in Bohr’s interpretation) and diffracts them back onto the science itself, thereby making a specific scientific contribution to an active scientific research field (i.e., the foundations of quantum physics). In particular, I argue that the conceptual shifts derived from my diffractive methodology not only reconfigure our understanding of the nature of scientific and other material-discursive practices but also are significant and robust enough to actually form the basis for a new interpretation of quantum physics. (Barad 2007:36)

> I argue that agential realism can in fact be understood as a legitimate interpretation of quantum mechanics, addressing crucial issues that Bohr’s framework of complementarity does not satisfactorily resolve.(Barad 2007:94)

ÉTICA

> ethical concerns are not simply supplemental to the practice of science but an integral part of it. But more than this, [...] *values are integral to the nature of knowing and being*. Objectivity is simultaneously an epistemological, ontological, and axiological issue, and questions of responsibility and accountability lie at the core of scientific practice. The correct identification of the objective referent of scientific practices of theorizing and experimenting requires an accounting of the ethical (as well as epistemological and ontological) concerns. It is not possible to extricate oneself from ethical concerns and correctly discern what science tells us about the world. Realism, then, is not about representations of an independent reality but about the real consequences, interventions, creative possibilities, and responsibilities of intra-acting within and as part of the world. (Barad 2007:37)

> How different ethics looks from the vantage point of constitutive entanglements. What would it mean to acknowledge that the “able-bodied” depend on the “disabled” for their very existence? What would it mean to take on that responsibility? What would it mean to deny one’s responsibility to the other once there is a recognition that one’s very embodiment is integrally entangled with the other? (Barad 2007:158)

TRÊS LEITURAS DIFERENTES DO LIVRO

> Physicists and philosophers of science may be particularly interested in **chapters 3, 4, and 7**. These chapters taken together constitute a detailed examination of Bohr’s philosophy-physics and offer a coherent reconstruction of the interpretative issues together with an accessible and systematic presentation of some important experimental results from the past decade. (Barad 2007:37)

> **Chapter 5** was originally published as a journal article, and I have retained its original structure so that it can continue to be usefully read as a separate stand-alone piece. Conversely, it could conceivably be skipped without losing the continuity of the argument (though surely risking some important insights). (Barad

2007:37)

> **Chapter 4** is a key chapter. And in many respects so is **chapter 7** (this is where the notion of ‘‘entanglement’’ takes on important nuances, textures, and crucial noncolloquial meanings). Less scientifically inclined readers, or readers who may think of themselves as not very interested in the details of the philosophical issues in quantum physics, may be tempted to skip chapter 7. I would like to encourage at least a cursory reading of this chapter, if only for its valuable insights into the nature of causality, identity, and nature. (Barad 2007:37-8)

VER ÁTOMOS

> I had the privilege of watching as an STM (scanning tunneling microscope) operator zoomed in on a sample of graphite, and as we approached a scale of thousands of nanometers . . . hundreds of nanometers . . . tens of nanometers . . . down to fractions of a nanometer, individual carbon atoms were imaged before our very eyes. The experience was so sublime that it sent chills through my body—and I stood there, a theoretical physicist who, like most of my kind, rarely ventures into the basements of physics buildings that experimental colleagues call “home,” conscious that this was one of those life moments when the amorphous jumble of history seems to crystallize in a single instant. How many times had I recounted for my students the evidence for the existence of atoms? And there they were — just the right size and grouped in a hexagonal structure with the interatomic spacings as predicted by theory. “If only Einstein, Rutherford, Bohr, and especially Mach could have seen this!” I exclaimed. (Barad 2007:39)

CONSTRUCIONISMO (epistem-ont-ologia)

> [A]s constructivists have tried to make clear, empirical adequacy is not an argument that can be used to silence charges of constructivism. The fact that scientific knowledge is constructed does not imply that science doesn’t “work,” and the fact that science “works” does not mean that we have discovered human-independent facts about nature. (Of course, the fact that empirical adequacy is not proof of realism is not the endpoint, but the starting point, for constructivists, who must explain how it is that such constructions work — an obligation that seems all the more urgent in the face of increasingly compelling evidence that the social practice of science is conceptually, methodologically, and epistemologically allied along particular axes of power.). (Barad 2007:40)

> What is needed is a deeper understanding of the ontological dimensions of scientific practice. It is crucial that we understand the technologies by which nature and culture interact. (Barad 2007:42)

HACKING (Ian)

> Shifting the focus in studies of science away from the traditional emphasis on theory construction to the examination of experimental practice, Hacking grounds his position on the ability of the experimenter to manipulate entities in the laboratory. That which exists is that which we can use to intervene in the world to affect something else: electrons are counted as real because they are effective experimental tools, not because they have been “found”. (Barad 2007:41)

> The philosopher Ian Hacking uses manipulability — that is, the ability to intervene effectively — as the criterion for determining what is real. Hacking claims that whatever individual experimental physicists might believe about whether scientific theories are true accounts of the world or simply useful models for thinking with, it wouldn’t make sense for them to be anything but realists toward the entities that they use as tools: “Experimenting on an entity does not commit you to believing that it exists. Only manipulating an entity, in order to experiment on something else, need do that. . . . [For example,]

electrons are no longer ways of organizing our thoughts or saving the phenomena that have been observed. They are now ways of creating phenomena in some other domain of nature. Electrons are tools" (Hacking 1983, 263). Thus Hacking spells out his criterion as follows: "We shall count as real what we can use to intervene in the world to affect something else, or what the world can use to affect us" (146). [...] Reflection is insufficient; intervention is key: "Don't just peer, interfere" (189). (Barad 2007:50)

LATOUR x HARAWAY

> Latour (1993) prioritizes stability [...], posing it as one variable of a two-dimensional geometry whose other axis connects the poles of Nature and Society. Essence thus becomes the trajectory of stabilization within this geometry that is meant to characterize the variable ontologies of quasi-objects. In contrast, Haraway (1988) emphasizes instability: it is the instability of boundaries defining objects that is the focal point of her explicit challenge not only to conceptions of nature that claim to be outside of culture, but also to the separation of epistemology from ontology. The instability of boundaries and Haraway's insistence that the objects of knowledge are agents in the production of knowledge feature her notions of cyborgs (1985) and material-semiotic actors (1988), which strike up dissonant and harmonic resonances with Latour's hybrids and quasi-objects (1993). (Barad 2007:41)

SISTEMAS DE REPRESENTAÇÃO

> Liberal social and political theories and theories of scientific knowledge alike owe much to the idea that the world is composed of individuals — presumed to exist before the law, or the discovery of the law — awaiting or inviting representation. The idea that beings exist as individuals with inherent attributes, anterior to their representation, is a metaphysical presupposition that underlies the belief in political, linguistic, and epistemological forms of representationalism. Or to put the point the other way around, representationalism is the belief in the ontological distinction between representations and that which they purport to represent; in particular, that which is represented is held to be independent of all practices of representing. That is, there are assumed to be two distinct and independent kinds of entities — representations and entities to be represented. The system of representation is sometimes explicitly theorized in terms of a tripartite arrangement. For example, in addition to knowledge (i.e., representations), on the one hand, and the known (i.e., that which is purportedly represented), on the other, the existence of a knower (i.e., someone who does the representing) is sometimes made explicit. When this happens, it becomes clear that representations are presumed to serve a mediating function between independently existing entities. This taken-for-granted ontological gap generates questions of the accuracy of representations. For example, does scientific knowledge accurately represent an independently existing reality? Does language accurately represent its referent? Does a given political representative, legal counsel, or piece of legislation accurately represent the interests of the people allegedly represented?. (Barad 2007:46-7)

> Critical examination of representationalism did not emerge until the study of science shifted its focus from the nature and production of scientific knowledge to the study of the detailed dynamics of the actual practice of science. This significant shift is one way to coarsely characterize the difference in emphasis between separate disciplinary studies of science (e.g., history of science, philosophy of science, sociology of science) and science studies. (Barad 2007:47)

> representationalism is a practice of bracketing out the significance of practices; that is, representationalism marks a failure to take account of the practices through which representations are produced. Images or representations are not snapshots or depictions of what awaits us but rather condensations or traces of

multiple practices of engagement. (Barad 2007:53)

> Representationalism and Newtonian physics have roots in the seventeenth century. The assumption that language is a transparent medium that transmits a homologous picture of reality to the knowing mind finds its parallel in a scientific theory that takes observation to be the benign facilitator of discovery, a transparent lens passively gazing at the world. Just as words provide descriptions or representations of a preexisting reality, observations reveal preexisting properties of an observation-independent reality. In the twentieth century, both the representational or mimetic status of language and the inconsequentiality of the observational process have been called into question. (Barad 2007:97)

A PERSPECTIVA DO DESEMPENHO (performance)

> *Performative* approaches call into question representationalism's claim that there are representations, on the one hand, and ontologically separate entities awaiting representation, on the other, and focus inquiry on the practices or performances of representing, as well as the productive effects of those practices and the conditions for their efficacy. A performative understanding of scientific practices, for example, takes account of the fact that knowing does not come from standing at a distance and representing but rather from *a direct material engagement with the world*. Importantly, what is at issue is precisely the nature of these enactments. Not any arbitrary conception of doings or performances qualifies as performative. And humans are not the only ones engaged in performative enactments (which are not the same as theatrical performances). (Barad 2007:49)

> What may seem evident to some is not simply a result of how things are independently of specific practices of seeing and other bodily engagements with the world. Rather, it has become increasingly clear that the seemingly self-evidentiary nature of bodily boundaries, including their seeming visual self-evidence, is a result of the repetition of (culturally and historically) specific bodily performance. (Barad 2007:155)

A INFRAESTRUTURA PRÁTICA DA TEORIA (apparatus)

> Social, technological, and scientific practices that included the entangled apparatuses of colonial conquest, democracy, world citizenship, antianarchism, trains, telegraphs, clocks, and other electromechanical devices composed of wires and gears all played a role in the production of the special theory of relativity. [...] Time isn't an abstract idea for Einstein; time is what we measure with a clock. [...] [I]deas that make a dfference in the world don't fly about free of the weightiness of their material instantiation. To theorize is not to leave the material world behind and enter the domain of pure ideas where the lofty space of the mind makes objective reflection possible. *Theorizing, like experimenting, is a material practice*. (Barad 2007:55)

> [T]heory and experiment are [...] seen as dynamic practices of material engagement with the world. (Barad 2007:55)

> [A]pparatuses provide the conditions for the possibility of determinate boundaries and properties of ''objects'' within phenomena, where *"phenomena" are the ontological insep- arability of objects and apparatuses*. (Barad 2007:110)

> In the absence of a given apparatus there is no unambiguous way to differentiate between the object and the agencies of observation: an apparatus must be introduced to resolve the ambiguity, but then the apparatus must be understood as part of what is being described. (Barad 2007:118)

> In Bohr's account, objectivity requires accountability to "permanent marks—such as a spot on a photographic plate, caused by the

impact of an electron—left on the bodies which define the experimental conditions" (Barad 2007:120)

> According to Bohr, *theoretical concepts* (e.g., position and momentum) are not ideational in character but rather *specific physical arrangements*. For example, the notion of position cannot be presumed to be a well-defined abstract concept; nor can it be presumed to be an individually determinate attribute of independently existing objects. Rather, position has meaning only when an apparatus with an appropriate set of fixed parts is used. And furthermore, any measurement of position using this apparatus cannot be attributed to some abstract, independently existing object but rather is a property of the *phenomenon* — the inseparability of the object and the measuring agencies. Similarly, momentum is meaningful only as a material arrangement involving a specific set of movable parts. Hence the indeterminacy of simultaneous position and momentum measurements is a straightforward matter of the material exclusion of position and momentum arrangements (one requiring fixed parts, and the complementary arrangement requiring those same parts to be movable). (Barad 2007:139)

> [A]pparatuses are specific material reconfigurings of the world that do not merely emerge in time but iteratively reconfigure spacetimematter as part of the ongoing dynamism of becoming. (Barad 2007:142)

> According to Bohr, apparatuses are macroscopic material arrangements through which particular concepts are given definition, to the exclusion of others, and through which particular phenomena with particular determinate physical properties are produced. (Barad 2007:142)

> Bohr insists that only concepts defined by their specific embodiment as part of the material arrangement—which includes instrumentation (e.g., photographic plates, pointers, or digital readout devices) that marks definite values of the specifically defined proper- ties and can be read by a human observer—are meaningful. That is, the larger material arrangement enacts a cut that resolves the inherent ontic-semantic indeterminacy through which the "subject" and the "object" emerge. (Barad 2007:142)

> My agential realist elaboration of apparatuses entails the following significant developments beyond Bohr's formulation: (1) apparatuses are specific material-discursive practices (they are not merely laboratory setups that embody human concepts and take measurements); (2) apparatuses produce differences that matter — they are boundary-making practices that are formative of matter and meaning, productive of, and part of, the phenomena produced; (3) apparatuses are material configurations/dynamic reconfigurings of the world; (4) apparatuses are themselves phenomena (constituted and dynamically reconstituted as part of the ongoing intra-activity of the world); (5) apparatuses have no intrinsic boundaries but are open-ended practices; and (6) apparatuses are not located in the world but are material configurations or reconfigurings of the world that re(con)figure spatiality and temporality as well as (the traditional notion of) dynamics (i.e., they do not exist as static structures, nor do they merely unfold or evolve in space and time). (Barad 2007:146)

> For Bohr, apparatuses are particular physical arrangements that give meaning to certain concepts to the exclusion of others; they are the local physical conditions that enable and constrain knowledge practices such as conceptualizing and measuring; they are productive of (and part of) the phenomena produced; they enact a local cut that produces "objects" of particular knowledge practices within the particular phenomena produced. (Barad 2007:146)

> [A]pparatuses *are* discursive practices, where the latter are

understood as specific material reconfigurings through which “objects” and “subjects” are produced. (Barad 2007:148)

> Apparatuses enact agential cuts that produce determinate boundaries and properties of “entities” within phenomena, where “phenomena” are the ontological inseparability of agentially intra-acting components. That is, agential cuts are at once ontic and semantic. It is only through specific agential intra-actions that the boundaries and properties of “components” of phenomena become determinate and that particular articulations become meaningful. In the absence of specific agential intra-actions, these ontic-semantic boundaries are indeterminate. In short, the apparatus specifies an agential cut that enacts a resolution (within the phenomenon) of the semantic, as well as ontic, indeterminacy. *Hence apparatuses are boundary-making practices*. (Barad 2007:148)

> He explains complementarity by considering two mutually exclusive ways for a person in a dark room to usefully intra-act with a stick or cane: one possibility is for the person to use the stick to negotiate his way around the room by holding the stick firmly in his hands, in which case the stick is properly understood to be part of the “subject,” or he can instead choose to hold the stick loosely to sense its features, in which case the stick is the “object” of observation [...] [.] The mutual exclusivity of these two different practices is evident. The stick cannot usefully serve as an instrument of observation if one is intent on observing it. The line between subject and object is not fixed, but once a cut is made (i.e., a particular practice is being enacted), the identification is not arbitrary but in fact materially specified and determinate for a given practice. (Barad 2007:154-5)

GÊNERO-BUTLER e STS-TAR

> Gendering, Butler argues, is a temporal process that operates through the reiteration of norms. In other words, Butler is saying that gender is not an inherent feature of individuals, some core essence that is variously expressed through acts, gestures, and enactments, but an iterated doing through which subjects come into being. But these are precisely the kinds of points that one would think that actor network theorists and other scholars attuned to looking for ways in which “objects” emerge through scientific practices would be especially attentive to. And yet there has been surprisingly little cross-pollination between feminist post-structuralist theory and science studies. Even in the feminist science studies literature, one is hard pressed to find direct engagements with Butler’s work on performativity. (Barad 2007:57)

> [M]ainstream science studies scholars seem to be unaware of the fact that the nature-culture dichotomy has been challenged vigorously on multiple grounds by feminist, poststructuralist, postcolonialist, queer, and other critical social theorists, and that attending to the issues they raise is an integral part of questioning the constitution of the nature-culture dichotomy and the work it does: not only *that* it matters, but *how* it matters and *for whom*. (Barad 2007:57)

> [T]he notions of objects, space, size, distance, and depth cannot be assumed to take on the same meanings for sighted and blind people. Clearly, we do not see merely with our eyes. Interacting with (or rather, intra-acting “with” and as part of) the world is part and parcel of seeing. Objects are not already there; they emerge through specific practices.(Barad 2007:157)

BUTLER e BOHR

> [A]s Butler and Bohr emphasize, that which is excluded in the enactment of knowledge-discourse-power practices plays a constitutive role in the production of phenomena — exclusions matter both to bodies that come to matter and those excluded from mattering. (Barad 2007:57)

LEITURA INJUSTA DE LATOUR

> What conception of power, what model of citizenship, what immigration policy is being enacted when a new representationalist democracy is being proposed that only acknowledges two kinds of citizens and their offspring—the fully human (those who had already been granted citizenship) and the fully nonhuman and their hybrids? (Barad 2007:59)

HUMANIDADE/NÃO-HUMANIDADE DIFERENCIAL

> Any proposal for a new political collective must take account of not merely the practices that produce distinctions between the human and the nonhuman but *the practices through which their differential constitution is produced*. (Barad 2007:59)

FOUCAULT É SERIAMENTE DATADO

> As Haraway (1997) correctly points out, Foucault's notion of the biopolitical field is seriously outdated and incapable of taking account of the new technoscientific practices that continually rework the boundaries between the "human" and the "nonhuman." (Barad 2007:65)

PODER-MATÉRIA-FORÇA

> Crucial to understanding the workings of power is an understanding of the nature of power in the fullness of its materiality. To restrict power's productivity to the limited domain of the social, for example, or to figure matter as merely an end product rather than an active factor in further materializations is to cheat matter out of the fullness of its capacity. How might we understand not only how human bodily contours are constituted through psychic processes but also how even the very atoms that make up the biological body come to matter, and more generally how matter makes itself felt? It is difficult to imagine how psychic and sociohistorical forces alone could account for the production of matter. Surely it is the case [...] that there are "natural," not merely "social," forces that matter. Indeed, there is a host of material-discursive forces—including ones that get labeled "social," "cultural," "psychic," "economic," "natural," "physical," "biological," "geopolitical," and "geological" — that may be important to particular (entangled) processes of materialization. (Barad 2007:66)

MEDIDA

> Measurement is a meeting of the "natural" and the "social." It is a potent moment in the construction of scientific knowledge — it is an instance where matter and meaning meet in a very literal sense. This is one reason why science studies scholars have been interested in studying the role of detectors (in high energy physics) — they are sites for making meaning (Traweek 1988; Galison 1987; Pickering 1984). (Barad 2007:67)

EMARANHADOS (entanglements)

> What is entailed in the investigation of entanglements? How can one study them? Is there any way to study them without getting caught up in them? What can one say about them? Are there any limits to what can be said? My purpose is not to make general statements as if there were something universal to be said about all entanglements, nor to encourage analogical extrapolation from my examples to others, nor to reassert the authority of physics. On the contrary, I hope my exploration will make clear that entanglements are highly specific configurations and it is very hard work building apparatuses to study them, in part because they change with each intra-action. In fact it is not so much that they change from one moment to the next or from one place to another, but that space, time, and matter do not exist prior to the intra-actions that reconstitute entanglements. Hence, it is possible for entangled relationalities to make connections between "entities" that do not appear to be proximate in space and time. [...] The point is that the

specificity of entanglements is everything. The apparatuses must be tuned to the particularities of the entanglements at hand. The key question in each case is this: how to responsibly explore entanglements and the differences they make. (Barad 2007:74)

ONDAS e PARTÍCULAS

> Classically speaking, particles are material entities, and each particle occupies a point in space at a given moment of time. Waves, on the other hand, are not things per se; rather, they are disturbances (which cannot be localized to a point) that propagate in a medium (like water) or as oscillating fields (like electromagnetic waves, the most familiar example being light). Unlike particles, waves can overlap at the same point in space. When this happens, their amplitudes combine to form a composite waveform. (Barad 2007:76)

> Crucially, diffraction patterns mark an important difference between waves and particles: according to classical physics, *only waves produce diffraction patterns; particles do not* (since they cannot occupy the same place at the same time). Indeed, a diffraction grating is simply an apparatus or material configuration that gives rises to a superposition of waves. In contrast to reflecting apparatuses, like mirrors, which produce images — more or less faithful — of objects placed a distance from the mirror, diffraction gratings are instruments that produce patterns that mark differences in the relative characters (i.e., amplitude and phase) of individual waves as they combine. [...] So unlike the phenomenon of reflection, which can be explained without taking account of the wavelike behavior of light (i.e., it can be explained using an approximation scheme called “geometrical optics” whereby light might well be a particle that bounces off surfaces), diffraction makes light’s wavelike behavior explicit (i.e., it can only be accounted for by using the full theory of “physical optics”). (Barad 2007:81)

> Before the early years of the twentieth century, it seemed that everything could be sorted neatly into the distinct categories of waves and particles. Each “bit” of nature had a distinct identity that landed it a place in one column or the other. After all, waves and particles are distinct phenomena with mutually exclusive characteristics. Particles are localized objects that occupy a given location at each moment in time. Waves have an entirely different nature: they are not even properly entities but rather disturbances in some medium or field. Waves have extension in space, occupying more than one position at any moment of time, like ocean waves that move along a stretch of beach; and furthermore, waves can overlap (i.e., interfere) with one another and occupy the same position at any moment of time, unlike particles. The dual nature of light and matter presented a quandary of the first order: an object is either localized or extended; it can’t be both. (Barad 2007:100)

> For Bohr, the crucial point is the fact that wave and particle behaviors are exhibited under complementary — that is, mutually exclusive — circumstances. According to Bohr, either we can find out which slit an electron goes through by using the which-path apparatus, in which case the resulting pattern will be that which characterizes particles, or we can forgo knowledge about which path the electron goes through (using the original unmodified two-slit apparatus) and obtain a wave pattern — we can’t have it both ways at once. (Barad 2007:106)

> Crucially, then, the position and momentum are not simultaneously determinate because they require mutually exclusive experimental cir- cumstances (a fixed support and a movable support respectively; see figure 12). (Barad 2007:111)

> Bohr resolves the wave-particle duality paradox as follows: “wave” and “particle” are classical concepts (that are given determinate meanings by different, indeed mutually exclusive, apparatuses and)

that refer to different, mutually exclusive phenomena, not to independent physical objects. He emphasized that this saved the theory from inconsistencies, since it was impossible to observe particle and wave behaviors simultaneously because mutually exclusive experimental arrangements are required. (Barad 2007:121)

GEOMETRICAL OPTICS x PHYSICAL OPTICS

> The ray approximation of geometrical optics works well when the wavelength of light is small compared with the physical dimensions of the objects it is interacting with, such as the size of a slit that the light passes through. If the wavelength is small compared with the slit size, then diffraction effects such as the bending of light will be too small to be noticeable. However, when the wavelength is approximately the same size as the slit or larger, then diffraction effects (i.e., the wave nature of light) cannot be ignored. Hence when the wavelength of light is approximately the same size as, or larger than, the object it encounters (e.g., sizable in comparison to the width of the slits), the techniques of physical optics — the full mathematical machinery that is attentive to the wave nature of light — must be used to correctly account for the phenomenon. In effect, then, geometrical optics is merely a shortcut way of deriving the correct results when the wavelength happens to be small enough compared to other relevant dimensions in the experiment. (Barad 2007:85)

O UNIVERSO É APARENTEMENTE CLÁSSICO, MAS REALMENTE QUÂNTICO

> The crux of the analogy is this: when in the case of a particular experiment the wave nature of light or matter is not significant (i.e., when the wavelength is small relative to other important dimensions), it may be possible to use classical mechanics (geometrical optics) as a shortcut to the more rigorous analysis that quantum mechanics (physical optics) provides. So whereas classical mechanics and geometrical optics are (nowadays understood to be) approximation schemes that are useful under some circumstances, quantum mechanics and physical optics are understood to be formalisms that represent the full theory and can account for phenomena at all length scales. Significantly, quantum mechanics is not a theory that applies only to small objects; rather, quantum mechanics is thought to be the correct theory of nature that applies at all scales. As far as we know, the universe is not broken up into two separate domains (i.e., the microscopic and the macroscopic) identified with different length scales with different sets of physical laws for each. (Barad 2007:85)

LIGHT DISTURBANCE

> [W]e don’t notice the furniture being rearranged in the room when we turn a light on in a dark room, although this is strictly the case. […] There are, however, situations in which the disturbance is noticeable (e.g., when the accuracy of the measurement is increased beyond a certain limit or when the object is sufficiently small). (Barad 2007:108)

CAUSALITY

> Second, causality is too often conceptualized as a binary affair: either a situation of strict determinism applies (i.e., causal determination) or there is a state of freedom (i.e., no causal determination). However, there are more ways to think about causal relations than the usual choices between determinism and free will (as Bohr specially mentions). Since traditional formulations of causality assume that independently determinate entities precede some causal interaction, we are clearly already on very new ground. Third, the fact that scientific results are reproducible requires (or at least seems to require) that intra-actions entail some kind of causal structure—that is, something being the cause, and something the effect—otherwise it would be impossible (or at least very difficult) to

account for the reproducibility of experiments. (Barad 2007:131)

A LÍNGUA

> What compels the belief that we have a direct access to cultural representations and their content that we lack toward the things represented? How did language come to be more trustworthy than matter? Why are language and culture granted their own agency and historicity, while matter is figured as passive and immutable or at best inherits a potential for change derivatively from language and culture? (Barad 2007:132)

> Nietzsche warned against the mistaken tendency to take grammar too seriously: allowing linguistic structure to shape or determine our understanding of the world, believing that the subject-and-predicate structure of language reflects a prior ontological reality of substance and attribute. The belief that grammatical categories reflect the underlying structure of the world is a continuing seductive habit of mind worth questioning. (Barad 2007:133)

PERFORMATIVIDADE

> performativity is properly understood as a contes- tation of the unexamined habits of mind that grant language and other forms of representation more power in determining our ontologies than they deserve. (Barad 2007:133)

FORÇAS ANTROPOCÊNTRICAS

> Representationalism, metaphysical individualism, and humanism work hand in hand, holding this worldview in place. These forces have such a powerful grip on contemporary patterns of thought that even some of the most concerted efforts to escape the grasp of these anthropocentric forces have failed. (Barad 2007:134)

DIFERENÇA E REPETIÇÃO EM BARAD

> Difference cannot be taken for granted; it matters—indeed, it is what matters. The world is not populated with things that are more or less the same or different from one another. Relations do not follow relata, but the other way around. Matter is neither fixed and given nor the mere end result of different processes. Matter is produced and productive, generated and generative. Matter is agentive, not a fixed essence or property of things. Mattering is differentiating, and which differences come to matter, matter in the iterative production of different differences. Changing patterns of difference are neither pure cause nor pure effect; indeed, they are that which effects, or rather enacts, a causal structure, differentiating cause and effect. Difference patterns do not merely change in time and space; spacetime is an enactment of differentness, a way of making/marking here and now. (Barad 2007:136-7)

CRÍTICA AO REPRESENTACIONISMO

> Representationalism takes the notion of separation as foundational. It separates the world into the ontologically disjunct domains of words and things, leaving itself with the dilemma of their linkage such that knowledge is possible. If words are untethered from the material world, how do representations gain a foothold? If we no longer believe that the world is teeming with inherent resemblances whose signatures are inscribed on the face of the world, things already emblazoned with signs, words lying in wait like so many pebbles of sand on a beach there to be discovered, but rather that the knowing subject is enmeshed in a thick web of representations such that the mind cannot see its way to objects that are now forever out of reach and all that is visible is the sticky problem of humanity's own captivity within language, then it becomes apparent that representationalism is a prisoner of the problematic metaphysics it postulates. Like the frustrated would-be runner in Zeno's paradox, representationalism never seems to get any closer to solving the problem it poses because it is caught in the

> impossibility of stepping outward from its metaphysical starting place. What is needed is a new starting place. (Barad 2007:137)

TRANSFORMANDO A EPISTEMOLOGIA DE BOHR NUMA ONTOLOGIA

> Unfortunately Bohr does not explore the crucial ontological dimensions of his insights but rather focuses on their epistemological import. I have mined his writings for his implicit ontological views (see chapter 3) and here elaborate on them in the development of an agential realist ontology. (Barad 2007:138)

DISCURSO (Foucault)

> Discourse is not what is said; it is that which constrains and enables what can be said. Discursive practices define what counts as meaningful statements. (Barad 2007:146)

SABER

> Knowing is a matter of intra-acting. (Barad 2007:149)

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Vida eletrônica em McLuhan (1994 [1964])

Published 27/06/2019 McLuhan Leave a Comment

MCLUHAN, Marshall. 1994. *Understanding media: the extensions of man*. Cambridge: The MIT Press. [1964]

THE MEDIUM (framework) & THE MESSAGE (picture)

> [I]t is **the framework** itself that changes with new technology, and not just the picture within the frame. Instead of thinking of doing our shopping by television, we should become aware that TV intercom means the end of shopping itself, and the end of work as we know it as present. The same fallacy besets out thinking about TV and education. **We think of TV as an incidental aid, whereas in fact it has already transformed the learning process of the young**, quite independently of home and school alike. (McLuhan 1994:219)

INTRINSIC MEANING OF ELECTRICITY-LIGHT

> The electric energy can be applied indifferently and quickly to many kinds of tasks. [...] Such was never the case in the mechanical systems. The power and the work done were always in direct relation, whether it was hand and hammer, water and wheel, horse and cart, or steam and piston. **Electricity brought a strange elasticity in this matter, much as light** itself illuminates a total field and does not dictate what shall be done. The same light can make possible a multiplicity of tasks, just as with electric power. Light is a nonspecialist kind of energy or power that is identical with information and knowledge. Such is also the relation of electricity to automation, since both energy and information can be applied in a great variety of ways. [...] Grasp of this fact is indispensable to the understanding of the electronic age, and of automation in particular. Energy and production now tend to fuse with information and learning. Marketing and consumption tend to become one with learning, enlightenment, and the intake of information. This is all part of the electric *implosion* that now follows or succeeds the centuries of *explosion* and increasing specialism. **The electronic age is literally one of illumination**. Just as light is at once energy and information, so electric automation unites production, consumption, and learning in an inextricable process. (McLuhan 1994:350)

ELECTRICITY (instantaneity; enlightenment; sensory-motor system)

> All nonelectric media had merely hastened things a bit. The wheel, the road, the ship, the airplane, and even the space rocket are utterly lacking in the character of **instant movement**. Is it strange, then, that electricity should confer on all previous human organization a completely new character? **The very toil of man now becomes a kind of enlightenment**. **As unfallen Adam in the Garden of Eden** was appointed the task of the contemplation and naming of creatures, so with automation. We have now only to name and program a process or a product in order for it to be

accomplished. (McLuhan 1994:351-2)

> The electric changes associated with automation have nothing to do with ideologies or social programs. If they had, they could be delayed or controlled. In stead, **the technological extension of our central nervous system that we call the electric media** began more than a century ago [from 1964], subliminally. (McLuhan 1994:352)

> Mechanization depends on the breaking up of processes into homogenized but unrelated bits. Electricity unifies these fragments once more because its speed of operation requires a **high degree of interdependence among all phases of any operation**. It is this **electric speed-up and interdependence** that has ended the assembly line in industry. (McLuhan 1994:352-3)

> All that we had previously achieved mechanically by great exertion and coordination can now be done electrically without effort. [...] Wealth and work become information factors, and totally new structures are needed to run a business or relate it to social needs and markets. With the electric technology, the **new kinds of instant interdependence and interprocess** that take over production also enter the market and social organizations. [...] Our education has long ago acquired the fragmentary and piecemeal character of mechanism. It is now under increasing pressure to acquire the depth and interrelation that are indispensable in **the all-at-once world of electric organization**. (McLuhan 1994:357)

ELECTRIC SPEED

> The headline for an Associated Press release (February 25, 1963) read: “PRESS BLAMED FOR SUCCESS [...] KENNEDY MANAGES NEWS BOLDLY, CYNICALLY, SUBTLY, KROCK CLAIMS” Arthur Krock is quoted as saying that “the principle onus rests on the printed and electronic process itself.” That may seem like another way of saying that “history is to blame.” But it is **the instant consequences of electrically moved information** that makes necessary a deliberate artistic aim in the placing and management of news. In diplomacy the same **electric speed** causes the decisions to be announced before they are made in order to ascertain the varying responses that might occur when such decisions actually are made. Such procedure, quite inevitable at **the electric speed that involves the entire society in the decision-making process**, shocks the old press men because it **abdicates any definite point of view**. As the speed of information increases, the tendency is for politics to move away from representation and delegation of constituents toward **immediate involvement of the entire community in the central acts of decision**. Slower speeds of information make delegation and representation mandatory. Associated with such delegation are the points of view of the different sectors of public interest that are expected to be put forward for processing and consideration by the rest of the community. When the electric speed is introduced into such a delegated and representational organization, this obsolescent organization can only be made to function by a series of subterfuges and makeshifts. These strike some observers as base betrayals of the original aims and purposes of the established forms. (McLuhan 1994:203-4)

> Today it is **the instant speed of electric information** that, for the first time, permits easy recognition of the patterns and the formal contours of change and development. The entire world, past and present, now reveals itself to us like a growing plant in an enormously accelerated movie. **Electric speed is synonymous with light and with the understanding of causes**. So, with the use of electricity in previously mechanized situations, men easily discover causal connections and patterns that were quite unobservable at the slower rates of mechanical change. (McLuhan 1994:352)

> **Electric speed requires organic structuring of the global economy** quite as much as early mechanization by print and by road led to the acceptance of national unity. (McLuhan 1994:353)

> **War** is accelerated social change, as **an explosion** is an accelerated chemical reaction and movement of matter. With electric speeds governing industry and social life, explosion in the sense of crash development becomes normal. On the other hand, the old-fashioned kind of "war" becomes as impracticable as playing hopscotch with bull dozers. **Organic interdependence means that disruption of any part of the organism can prove fatal to the whole** (McLuhan 1994:353)

> The result of **electric speed-up in industry** at large is **the creation of intense sensitivity to the interrelation and interprocess of the whole**, so as to call for ever-new types of organization and talent. Viewed from the old perspectives of the machine age, this electric network of plants and processes seems brittle and tight. In fact, it is not mechanical, and it does begin to develop **the sensitivity and pliability of the human organism**. But it also demands the same varied **nutriment and nursing** as the animal organism. (McLuhan 1994:355)

CRIATURAS ELETRÔNICAS

> Approached as newspaper form, any part of Joyce's Ulysses or any poem of T. S. Eliot's before the Quartets is more readily enjoyed. Such, however, is the austere continuity of book culture that it scorns to notice these *liaisons dangereuses* among the media, especially the scandalous affairs of the book-page with **electronic creatures from the other side of the linotype**. (McLuhan 1994:216)

ELECTRIC LIGHT (pure information; medium = message = total change)

> The electric light is **pure information**. It is a medium without a message, as it were, unless it is used to spell out some verbal ad or name. This fact, characteristic of all media, means that **the "content" of any medium is always another medium**. (McLuhan 1994:8)

> Whether the light is being used for brain surgery or night baseball is a matter of indifference. It could be argued that these activities are in some way the "content" of the electric light, since they could not exist without the electric light. This fact merely underlines the point that **"the medium is the message" because it is the medium that shapes and controls the scale and form of human association and action**. (McLuhan 1994:9)

> **The message of the electric light** is like the message of electric power in industry, totally radical, pervasive, and decentralized. For electric light and power are **separate from their uses**, yet they **eliminate time and space factors in human association** exactly as do radio, telegraph, telephone, and TV, creating **involvement in depth**. (McLuhan 1994:9)

> The electric light ended the regime of night and day, of indoors and out-of-doors. But it is when the light encounters already existing patterns of human organization that the **hybrid energy** is released. Cars can travel all night, ball players can play all night, and windows can be left out of buildings. In a word, **the message of the electric light is total change**. It is pure information without any content to restrict its **transforming and informing power**. [...] If the student of media will but meditate on **the power of this medium of electric light to transform every structure of time and space and work and society that it penetrates or contacts**, he will have the key to the form of the power that is in all media to reshape any lives that they touch. Except for light, all other media come in pairs, with one acting as the "content" of the other, obscuring the operation of both. (McLuhan 1994:52)

> In the twentieth century we are familiar with the **changes** in housing and architecture that are the result of electric energy made available to elevators. The same energy devoted to lighting has **altered** our living and working spaces even more radically. Electric light **abolished** the divisions of night and day, of inner and outer, and of the subterranean and the terrestrial. It **altered** every consideration of space for work and production as much as the other electric media had **altered** the space-time experience of society. (McLuhan 1994:126-7)

> Electric lighting has brought into the cultural complex of the extensions of man in housing and city, an **organic flexibility** unknown to any other age. [...] With electric light not only can we carry out the most precise operations with no regard for time or place or climate, but we can photograph the submicroscopic as easily as we can enter the subterranean world of the mine and of the cave-painters. (McLuhan 1994:128)

> Lighting as an extension of our powers affords the clearest cut example of how such extensions alter our perceptions. [...] In this domain, **the medium is the message**, and when the light is on there is a world of sense that disappears when the light is off. (McLuhan 1994:128-9)

> The uses of light in the world of motion, whether in the motorcar or the movie or the microscope, are as diverse as the uses of electricity in the world of power. Light is information without "content," [...] a self-contained communication system in which **the medium is the message**. (McLuhan 1994:129)

FIRELIGHT x ELECTRIC LIGHT

> Persons grouped around a fire or candle for warmth or light are less able to pursue independent thoughts, or even tasks, than people supplied with electric light. (McLuhan 1994:359)

AUTOMATION & ELECTRICITY

> Automation is not an extension of the mechanical principles of fragmentation and separation of operations. It is rather the invasion of the mechanical world by **the instantaneous character of electricity**. That is why those involved in automation insist that it is a way of thinking, as much as it is a way of doing. **Instant synchronization of numerous operations** has ended the old mechanical pattern of setting up operations in lineal sequence. (McLuhan 1994:349)

> **Automation was first felt and seen on a large scale in the chemical industries** of gas, coal, oil, and metallic ores. The large changes in these operations made possible by electric energy have now, by means of the computer, begun to invade every kind of white-collar and management area. Many people, in consequence, have begun to look on the whole of **society as a single unified machine for creating wealth**. Such has been the normal outlook of the stockbroker, manipulating shares and information with the cooperation of the electric media of press, radio, telephone, and teletype. But **the peculiar and abstract manipulation of information as a means of creating wealth is no longer a monopoly of the stockbroker**. It is now shared by every engineer and by the entire communications industries. **With electricity as energizer and synchronizer, all aspects of production, consumption, and organization become incidental to communications**. The very idea of communication as interplay is inherent in **the electrical, which combines both energy and information in its intensive manifold**. (McLuhan 1994:354)

FEEDBACK

> Feedback is the end of the lineality that came into the Western world with the alphabet and the continuous forms of Euclidean space. (McLuhan 1994:355)

> Although an automated plant is almost like a tree in respect to the continuous intake and output, it is a tree that can change from oak to maple to walnut as required. It is part of the automation or electric logic that specialism is no longer limited to just one specialty. **The automatic machine** may work in a specialist way, but it is not limited to one line. **As with our hands and fingers** that are capable of many tasks, the automatic unit incorporates a power of adaptation that was quite lacking in the pre-electric and mechanical stage of technology. [...] And the characteristic of electric automation is all in this direction of return to the general-purpose handicraft flexibility that our own hands possess. The programming can now include endless changes of program. It is the **electric feedback**, or dialogue pattern, of the automatic and computer-programmed "machine" that marks it off from the older mechanical principle of one-way movement. (McLuhan 1994:356)

ENERGY x INFORMATION

> [I]n any automatic machine, or galaxy of machines and functions, the generation and transmission of power is quite separate from the work operation that uses the power. The same is true in all servo mechanist structures that involve feedback. **The source of energy is separate from the process of translation of information**, or the applying of knowledge. (McLuhan 1994:350)

> In the case of electricity, as energy for production becomes independent of the work operation, there is not only the speed that makes for total and organic interplay, but there is, also, the fact that **electricity is sheer information that, in actual practice, illuminates all it touches**. Any process that approaches instant interrelation of a total field tends to raise itself to the level of **conscious awareness**, so that computers seem to "think." In fact, they are highly specialized at present, and quite lacking in the full process of interrelation that makes for consciousness. (McLuhan 1994:351)

SPEED & POWER (global village)

> The point of the matter of speed-up by wheel, road, and paper is **the extension of power in an ever more homogeneous and uniform space**. [...] [T]he speed-up of the electronic age is as disrupting for literate, lineal, and Western man as the Roman paper routes were for tribal villagers. [...] Our specialist and fragmented civilization of center-margin structure is suddenly experiencing an **instantaneous reassembling** of all its mechanized bits into an **organic whole**. This is the new world of **the global village**. (McLuhan 1994:92-3)

MONEY & POWER

> Money, like writing, has the power to **specialize** and to **rechannel** human energies and to **separate** functions, just as it **translates and reduces** one kind of work to another. Even in the electronic age it has lost none of this power.(133)

> "Money talks" because money is a metaphor, a transfer, and a bridge. Like words and language, **money is a storehouse of communally achieved work, skill, and experience**. Money, however, is also a specialist technology like writing; and as writing intensifies the visual aspect of speech and order, and as the clock visually separates time from space, so **money separates work from the other social functions**. Even today money is a language for translating the work of the farmer into the work of the barber, doctor, engineer, or plumber. As a vast social metaphor, bridge, or translator, money – like writing – **speeds up** exchange and **tightens** the bonds of interdependence in any community. It gives great **spatial extension and control** to political organizations, just as writing does, or the calendar. It is **action at a distance**, both in space and in time. In a highly literate, fragmented society, "Time is money," and money is the store of other people's time and

effort. […] Today, as **the new vortices of power are shaped by the instant electric interdependence of all men on this planet**, the visual factor in social organization and in personal experience recedes, and money begins to be less and less a means of storing or exchanging work and skill. Automation, which is electronic, does not represent physical work so much as programmed knowledge. **As work is replaced by the sheer movement of information, money as a store of work merges with the informational forms of credit and credit card**. From coin to paper currency, and from currency to credit card there is a steady progression toward commercial exchange as the movement of information itself. This trend toward an inclusive information is the kind of image represented by the credit card, and approaches once more the character of **tribal money**. (McLuhan 1994:136-7)

KNOWLEDGE-GATHERER

> Nowadays, with computers and electric programming, the means of storing and moving information become less and less visual and mechanical, while increasingly **integral and organic**. The total field created by the **instantaneous electric forms** cannot be visualized any more than the velocities of electronic particles can be visualized. The instantaneous creates an interplay among time and space and human occupations, for which the older forms of currency exchange become increasingly inadequate. […] Both time (as measured visually and segmentally) and space (as uniform, pictorial, and enclosed) disappear in the electronic age of instant information. In the age of instant information man ends his job of fragmented specializing and assumes the *role* of **information-gathering**. Today information-gathering resumes the inclusive concept of "culture," exactly as the primitive food-gatherer worked in complete equilibrium with his entire environment. Our quarry now, in this new nomadic and "workless" world, is knowledge and insight into the creative processes of life and society. (McLuhan 1994:138-9)

INFORMATION-GATHERER GENEALOGY

> A brief summary of technological events relating to the phonograph might go this way: […] The telegraph translated writing into sound, a fact directly related to the origin of both the telephone and phonograph. With the telegraph, the only walls left are the vernacular walls that the photograph and movie and wirephoto overleap so easily. The electrification of writing was almost as big a step into the non visual and auditory space as the later steps soon taken by telephone, radio, and TV. […] **Man the food-gatherer reappears incongruously as information-gatherer**. In this role, electronic man is no less a nomad than his paleolithic ancestors." (McLuhan 1994:283)

> Thousands of years ago **man, the nomadic food-gatherer**, had taken up positional, or relatively sedentary, tasks. He began to specialize. The development of writing and printing were major stages of that process. They were supremely specialist in separating the roles of knowledge from the roles of action […]. But with electricity and automation, the technology of fragmented processes suddenly fused with the human dialogue and the need for over-all consideration of human unity. **Men are suddenly nomadic gatherers of knowledge**, nomadic as never before, informed as never before, free from fragmentary special ism as never before – but also involved in the total social process as never before; since with electricity we extend our central nervous system globally, instantly interrelating every human experience. […] Industry as a whole has become **the unit of reckoning**, and so with society, politics, and education as wholes. […] Electric means of storing and moving information with speed and precision make the largest units quite as manageable as small ones. […] **Total interdependence is the starting fact**. (McLuhan 1994:358-9)

ELECTRIC MAN

> **Literate man** naturally dreams of visual solutions to the problems of human differences. At the end of the nineteenth century, this kind of dream suggested similar dress and education for both men and women. The **failure** of the sex-integration programs has provided the theme of much of the literature and psychoanalysis of the twentieth century. Race integration, undertaken on the basis of visual uniformity, is an extension of the same cultural strategy of literate man, for whom differences always seem to need eradication, both in sex and in race, and in space and in time. **Electronic man**, by becoming ever more deeply involved in the actualities of the human condition, cannot accept the literate cultural strategy. [...] The entire approach to these problems in terms of uniformity and social homogenization is a final pressure of the mechanical and industrial technology. Without moralizing, it can be said that **the electric age, by involving all men deeply in one another, will come to reject such mechanical solutions**. It is more difficult to provide uniqueness and diversity than it is to impose the uniform patterns of mass education; but **it is such uniqueness and diversity that can be fostered under electric conditions as never before**. (McLuhan 1994:316)

TRABALHO MECÂNICO x ELÉTRICO

> It was the telephone, paradoxically, that sped the commercial adoption of the typewriter. The phrase “Send me a memo on that,” repeated into millions of phones daily, helped to create the huge expansion of the typist function. [...] In no time at all, **the telephone expanded the work to be done on the typewriter** to huge dimensions. (McLuhan 1994:262-3)

> Northcote Parkinson’s law that “**work expands so as to fill the time available for its completion**” is precisely the zany dynamic provided by the telephone. [...] In any given structure, **the rate of staff accumulation is not related to the work done but to the intercommunication among the staff, itself**. [...] What Parkinson carefully hides from himself and his readers is simply the fact that **in the area of information movement, the main “work to be done” is actually the movement of information**. **The mere interrelating of people by selected information is now the principal source of wealth in the electric age**. (McLuhan 1994:262-3)

> “Work to be done,” of course, means the transformation of one kind of material energy into some new form, as trees into lumber or paper, or clay into bricks or plates, :or metal into pipe. In terms of this kind of work, the accumulation of office personnel in a navy, for example, goes up as the mumber of ships goes down. [...] In the preceding mechanical age, work had [...] meant the processing of various materials by assembly-line fragmentation of operations and hierarchically delegated authority. Electric power circuits, in relation to the same processing, eliminate both the assembly line and the delegated authority. **Especially with the computer, the work effort is applied at the “programming” level, and such effort is one of information and knowledge**. (McLuhan 1994:263)

> In the decision-making and “make happen” aspect of the work operation, **the telephone and other such speed-ups of information have ended the divisions of delegated authority in favor of the “authority of knowledge.”** It is as if a symphony composer, instead of sending his manuscript to the printer and thence to the conductor and to the individual members of the orchestra, were to compose directly on **an electronic instrument** that would render each note or theme as if on the appropriate instrument. This **would end at once all the delegation and specialism of the symphony orchestra that makes it such a natural model of the mechanical and industrial age**. The typewriter, with regard to the poet or novelist, comes very close to the promise of electronic music, insofar as **it compresses or unifies the various jobs of poetic composition and**

publication. (McLuhan 1994:263-4)

SPECIALIZATION (action) x AWARENESS (understanding)

> The very success we enjoy in specializing and separating functions in order to have speed-up, however, is at the same time the cause of inattention and unawareness of the situation. [...] Nietzsche said **understanding stops action**, and men of action seem to have an intuition of the fact in their shunning the dangers of comprehension. (McLuhan 1994:92)

THE MECHANICAL AS INTERLUDE BETWEEN 2 ORGANIC PERIODS

> [T]he electronic age [...] found that **instant speeds** abolish time and space, and return man to an **integral and primitive awareness**. [...] Man now can look back at two or three thousand years of varying degrees of mechanization with full awareness of the mechanical as an interlude between two great organic periods of culture. In 1911 the Italian sculptor Boccioni said, "**We are primitives of an unknown culture**." Half a century later we know a bit more about the new culture of the electronic age, and that knowledge has lifted the mystery surrounding the machine. (McLuhan 1994:152)

PHOTOGRAPHY

> [P]hotography mirrored the external world automatically, yielding an exactly repeatable visual image. It was this all-important quality of uniformity and repeatability that had made the Gutenberg break between the Middle Ages and the Renaissance. Photography was almost as decisive in making the break between mere mechanical industrialism and the graphic age of electronic man. The step from the age of Typographic Man to the age of Graphic Man was taken with the invention of photography. Both daguerrotypes and photographs introduced light and chemistry into the making process. **Natural objects delineated themselves by an exposure intensified by lens and fixed by chemicals**. (McLuhan 1994:190)

MOTORCAR & ELECTRICITY

> If the motorist is technologically and economically far superior to the armored knight, it may be that **electric changes in technology are about to dismount him and return us to the pedestrian scale**. (McLuhan 1994:218)

> [L]ike the bees in the plant world, **men have always been the sex organs of the technological world**. The car is no more and no less a **sex object** than the wheel or the hammer. (McLuhan 1994:220)

> The **car** and the assembly line had become the ultimate expression of Gutenberg technology; that is, of uniform and repeatable processes applied to all aspects of work and living. **TV** brought a questioning of all mechanical assumptions about uniformity and standardization, as of all consumer values. (McLuhan 1994:221)

> The talk about the American car as a status symbol has always overlooked the basic fact that it is **the power of the motorcar that levels all social differences, and makes the pedestrian a second-class citizen**. [...] The simple and obvious fact about the car is that, more than any horse, it is an extension of man that **turns the rider into a superman**: It is a hot, explosive medium of social communication. (McLuhan 1994:221)

> [W]here one automobile can go, all other automobiles do go, and wherever the automobile goes, **the automobile version of civilization** surely follows. Now this is a TV-oriented sentiment that is not only anti car and anti-standardization, but anti-Gutenberg (McLuhan 1994:221)

> The willingness to accept the car as a status symbol, restricting its

more expansive form to the use of higher executives, is not a mark of the car and mechanical age, but of **the electric forces that are now ending this mechanical age of uniformity and standardization, and recreating the norms of status and role**. (McLuhan 1994:223-4)

> The car has become the carapace, the protective and aggressive shell, of urban and suburban man. Even before the Volkswagen, observers above street level have often noticed the near-resemblance of cars to shiny-backed **insects**. I**n the age of the tactile oriented skin-diver**, this hard shiny carapace is one of the blackest marks against the motorcar. (McLuhan 1994:224-5)

> It is for motorized man that the shopping plazas have emerged. They are strange islands that make the pedestrian feel friendless and disembodied. The car bugs him. [...] The car, in a word, has quite refashioned all of the spaces that unite and separate men, and it will continue to do so for a decade more [from 1964], by which time **the electronic successors to the car** will be manifest. (McLuhan 1994:225)

THE MOSAIC OF PRESS AS HUMAN INTEREST

> "[H]uman interest" is a technical term meaning that which happens when multiple book pages or **multiple information items are arranged in a mosaic on one sheet**. The book is a private confessional form that provides a "point of view." The press is a group confessional form that provides communal participation. [...] [I]t is **the daily communal exposure of multiple items in juxtaposition** that gives the press its complex dimension of human interest. (McLuhan 1994:204)

ELECTRONIC HUMAN INTEREST

> [T]he telegraph gave that immediate and inclusive dimension of "human interest" to news that does not belong to a "point of view." It is merely a comment on our absent mindedness and general indifference that after more than a century of telegraph news reporting, nobody has seen that **"human interest" is the electronic or depth dimension of immediate involvement in news**. [...] The electric gives powerful voices to the weak and suffering, and sweeps aside the bureaucratic specialisms and job descriptions of the mind tied to a manual of instructions. **The "human interest" dimension is simply that of immediacy of participation in the experience of others that occurs with instant information**. **People become instant, too, in their response of pity or of fury when they must share the common extension of the central nervous system with the whole of mankind**. (McLuhan 1994:253-4)

DEMOCRACY & THE ELECTRIC PRESS

> If we pay careful attention to the fact that **the press is a mosaic, participant kind or organization and a do-it-yourself kind of world**, we can see why it is so necessary to democratic government. [..] Douglas Cater is baffled by the fact that amidst the extreme fragmentation of government departments and branches, **the press somehow manages to keep them in relation** to each other and to the nation. He emphasizes the paradox that the press is dedicated to the process of cleansing by publicity, and yet that, in **the electronic world of the seamless web of events**, most affairs must be kept secret. Top secrecy is translated into public participation and responsibility by **the magic flexibility of the controlled news leak**. [...] It is by this kind of ingenious adaptation from day to day that Western man is beginning to accommodate himself to **the electric world of total interdependence**. Nowhere is this transforming process of adaptation more visible than in the press. The press, in itself, presents the contradiction of **an individualistic technology dedicated to shaping and revealing group attitudes**.

(McLuhan 1994:213)

NEURAL/GLOBAL NETWORK/VILLAGE

> It is a principal aspect of the electric age that it establishes a **global network** that has much of the character of our central nervous system. Our central nervous system is not merely an electric network, but it constitutes **a single unified field of experience**. (McLuhan 1994:348)

> The new kind of interrelation in both industry and entertainment is the result of **the electric instant speed**. Our new electric technology now extends the instant processing of knowledge by interrelation that has long occurred within our central nervous system. It is that same speed that constitutes "**organic unity**" and ends the mechanical age that had gone into high gear with Gutenberg. Automation brings in real "mass production," not in terms of size, but of **an instant inclusive embrace**. Such is also the character of "mass media." They are an indication, not of the size of their audiences, but of the fact that **everybody becomes involved in them at the same time**. [...] Automation affects not just production, but every phase of consumption and marketing; for **the consumer becomes producer in the automation circuit**, quite as much as **the reader of the mosaic telegraph press** makes his own news, or just ***is* his own news**. (McLuhan 1994:349)

ELECTRONIC GLOBAL VILLAGE

> **By electricity, we everywhere resume person-to-person relations as if on the smallest village scale. It is a relation in depth, and without delegation of functions or powers. The organic everywhere supplants the mechanical.** Dialogue supersedes the lecture. The greatest dignitaries hobnob with youth. When a group of Oxford undergraduates heard that Rudyard Kipling received ten shillings for every word he wrote, they sent him ten shillings by telegram during their meeting: "Please send us one of your very best words." Back came the word a few minutes later: "Thanks." (McLuhan 1994:255-6)

> A century ago the effect of the telegraph was to send the presses racing faster, just as the application of the electric spark was to make possible the internal-combustion engine with its instant precision. Pushed further, however, **the electric principle everywhere dissolves the mechanical** technique of visual separation and analysis of functions.(McLuhan 1994:256)

MEDIA VICTIMS

> The **instant all-at-onceness and total involvement** of the telegraphic form still repels some literary sophisticates. For them, visual continuity and fixed "point of view" render the immediate participation of the instant media as distasteful and unwelcome as popular sports. These people are as much media victims, unwittingly mutilated by their studies and toil, as children in a Victorian blacking factory. For **many people, then, who have had their sensibilities irremediably skewed and locked into the fixed postures of mechanical writing and printing**, the iconic forms of the electric age are as opaque, or even as invisible, as hormones to the unaided eye. (McLuhan 1994:254)

ELECTRONIC MUSIC

> With the electronic music instrument, any tone can be made available in any intensity and for any length of time. Note that the older symphony orchestra was, by comparison, a machine of separate instruments that *gave the effect of organic unity*. With the electronic instrument, one *starts* with organic unity as an immediate fact of perfect synchronization. This makes the attempt to create the effect of organic unity quite pointless. **Electronic music must seek other goals**. (McLuhan 1994:357)

EDUCATION AS THE FUTURE OF WORK

> The very same process of automation that causes a withdrawal of the present work force from industry causes learning itself to become the principal kind of production and consumption. [...] **Paid learning is already becoming both the dominant employment and the source of new wealth in our society**. This is the new *role* for men in society, whereas the older mechanistic idea of "jobs," or fragmented tasks and specialist slots for "workers," becomes meaningless under automation. (McLuhan 1994:350-1)

Como pensam as instituições? (Douglas 1986)

Published 28/01/2019 Douglas , Durkheim Leave a Comment

DOUGLAS, Mary. 1986. *How institutions think*. Syracuse: Syracuse University Press.

Obs: Este livro resulta de uma coletânea de textos reunidos e editados por ocasião de um curso ministrado por Mary Douglas (6th Abrams Lectures) na Syracuse University (New York).

PRECISAMOS DE UMA TEORIA COGNITIVA DAS INSTITUIÇÕES

> A theory of institutions that will amend the current un-sociological view of human cognition is needed, and a cognitive theory to supplement the weaknesses of institutional analysis is needed as well. (Douglas 1986:ix)

QUEBRANDO O FEITIÇO DA APRESENTAÇÃO INVERTIDA DO ARGUMENTO SOBRE O CONTROLE SOCIAL DA COGNIÇÃO

> This is the first book I should have written after writing on African fieldwork. [...] This volume is one more *post hoc* introduction [to "a coherent argument about the social control of cognition"]. [...] I wish I could hope that this volume might be so acceptable as to break the spell, so that I could now start writing forwards instead of backwards. (Douglas 1986:ix-x)

SOBRE *PURITY AND DANGER*

> I wrote *Purity and Danger* (1966) in an attempt to generalize from Africa to our own condition. My friends told me at the time that *Purity and Danger* was obscure, intuitive, and ill-prepared. They were right, and I have been trying ever since to understand the theoretical and logical anchoring that I would have needed to present a coherent argument about the social control of cognition. (Douglas 1986:ix)

O PROBLEMA DO "SISTEMA COGNITIVO SUPRAPESSOAL"

> This book begins with the hostility that greeted Emile Durkheim and the Durkheimians when they talked about institutions or social groups as if they were individuals. The very idea of a suprapersonal cognitive system stirs a deep sense of outrage. [...] An individual that encompasses thinking humans is assumed to be of a nasty totalitarian sort, a highly centralized and effective dictatorship. (Douglas 1986:x)

O LIVRO É DEDICADO A ROBERT MERTON E AO MARIDO DE DOUGLAS

> The one scholar whose mark is most strongly on the whole area covered here is Robert Merton. To him I respectfully and affectionately dedicate the book, trusting his generosity to overlook its failings. My husband deserves a special tribute. When two problems seem insoluble, our long experience of domestic life has suggested an oblique approach. Instead of a head-on attack on each separate issue, one set of problems can be made to confront the other. This strategy, which produces new definitions of what has to be solved, gives the framework of this book. (Douglas 1986:x-xi)

INSTITUIÇÕES (não têm individualidade cognitiva, mas conferem identidade

por meio de analogias, sistemas classificatórios, operações de esquecimento e rememoração e decisões de vida ou morte**)**

> Institutions Cannot Have Minds of Their Own (Chapt.1)

> Institutions Are Founded on Analogy (título do capítulo 4)

> Institutions Confer Identity (título do capítulo 5)

> Institutions Remember and Forget (título do capítulo 6)

> Institutions Do the Classifying (título do capítulo 8)

> Institutions Make Life and Death Decisions (título do capítulo 9)

COOPERAÇÃO/REJEIÇÃO e SOLIDARIEDADE/DESCONFIANÇA (o elo social é um tema passional e fundamental, mas evitado)

> Writing about cooperation and solidarity means writing at the same time about rejection and mistrust. Solidarity involves individuals being ready to suffer on behalf of the larger group and their expecting other individual members to do as much for them. It is difficult to talk about these questions coolly. They touch on intimate feelings of loyalty and sacredness. Anyone who has accepted trust and demanded sacrifice or willingly given either knows the power of the social bond. Whether there is a commitment to authority or a hatred of tyranny or something between the extremes, the social bond itself is taken to be something above question. Attempts to bring it out into the light of day and to investigate it are resisted. Yet it needs to be examined. Everyone is affected directly by the quality of trust around him or her. Sometimes a gullible steadfastness allows leaders to ignore the public need. Sometimes trust is short term and fragile, dissolving easily into panic. Sometimes mistrust is so deep that cooperation is impossible. (Douglas 1986:1)

> For them [Durkheim and Fleck], true solidarity is only possible to the extent that individuals share the categories of their thought. (Douglas 1986:8)

> Not just any busload or haphazard crowd of people deserves the name of society: there has to be some thinking and feeling alike among members. […] Just because it is legally constituted, a group cannot be said to "behave" – still less to think or feel. […] If this is literally true, it is implicitly denied by much of social thought. (Douglas 1986:9)

"WHO SHALL SURVIVE" IS AN INSTITUTIONAL MATTER (nod to Moreno)

> [I]ndividuals in crises do not make life and death decisions on their own. Who shall be saved and who shall die is settled by institutions. Putting it even more strongly, individual ratiocination cannot solve such problems. An answer is only seen to be the right one if it sustains the institutional thinking that is already in the minds of individuals as they try to decide. (Douglas 1986:4)

OS PRESSUPOSTOS INDIVIDUALISTAS DA TEORIA DA AÇÃO RACIONAL (para o caso de 5 homens isolados e sem alimentos)

> Only the individualists, bound by no ties to one another and imbued by no principles of solidarity, would hit upon the cannibal gamble as the proper course. (Douglas 1986:8)

O DIÁLOGO DE SURDOS (premisses=assumptions=institutions; improve our understanding = reformulate = transform)

> Arguing from different premises, we can never improve our understanding unless we examine and reformulate our assumptions. (Douglas 1986:8)

ELOGIO A DURKHEIM

> Emile Durkheim had another way of thinking about the conflict between individual and society [in comparison with the

rationalists/individualists]. He transferred it to warring elements within the person. For him the initial error is to deny the social origins of individual thought. Classifications, logical operations, and guiding metaphors are given to the individual by society. Above all, the sense of a priori rightness of some ideas and the nonsensicality of others are handed out as part of the social environment. He thought the reaction of outrage when entrenched judgments are challenged is a gut response directly due to commitment to a social group. In his view, the only program of research that would explain how a collective good is created would be work in epistemology. […] [But] Durkheim's sociological epistemology ran into considerable opposition and has remained undeveloped to this day. By upgrading the role of society in organizing thought, he downgraded the role of the individual. […] He seemed to be invoking some mystic entity, the social group, and endowing it with superorganic, self-sustaining powers. For this he earned attack as a conservative social theorist. In spite of these weaknesses, his idea was still too good to be dismissed. (Douglas 1986:10)

> To read *The Elementary Forms of the Religious Life* in isolation from the rest of Durkheim's work is to insure misunderstanding it, for his thinking was a single arch in which each major publication was a necessary statement. He harped always on the one theme, the loss of classificatory solidarity. He deplored its irreplaceability and the crises of individual identity that follow from absence of strong, supporting, publicly shared, and privately internalized classifications. He taught that publicly standardized ideas (collective representations) constitute social order. He recognized that the hold they have upon the individual varies in strength. Calling it moral density, he tried to measure its strength and to assess the effects of its weakness. According to Durkheim, sociological method requires that individual responses be treated as psychological facts to be studied in a frame of reference of individual psychology. Only collective representations are social facts, and social facts count for more than psychological ones because the individual psyche is constituted by the socially constructed classifications. Since the mind is already colonized, we should at least try to examine the colonizing process. […] When Durkheim wrote with Marcel Mauss the essay on primitive classification (1903), what had already been a long-term conviction (that true solidarity is based on shared classifications), started to become a method. […] [W]while everyone else was adopting institutionally prescribed postures about modernity, the loss of legitimacy, wonder and sacredness, Durkheim and Mauss proposed to analyze the extent to which the mundane classifications we use are projections of the social structure partaking in the aura of sacredness. The sacred that Weberians regretted was an unanalyzable mystique. The sacred for Durkheim and Mauss was nothing more mysterious or occult than shared classifications, deeply cherished and violently defended. That is not all: this idea of the sacred is capable of analysis. (Douglas 1986:96-7)

> In writing about the sacred, Durkheim was trying to put his finger on how institutions do the classifying. His idea was not that sacred power flashes out as an inherent property of constitutions and kings, but the other way around. The peoples he chose to represent the elementary social forms have no constitutions, kings, or any superordinate coercive authority. To the Australians, the sacred can only draw its power from their own consensus. Its coercive strength, which arms the whole universe with punishing taboos to reinforce the individual's wavering commitment, is based on the classifications inside the same individual's head. It is based essentially upon the classifications pertaining to the division of labor. Thus, his theory of the sacred is not just one about disappearing civilizations but also one about moderns, since we also have a society based on the division of labor. The book on suicide (1897) and his development of the idea of anomie are Durkheim's best demonstration that he expected us to learn about ourselves

from ethnographic societies. (Douglas 1986:97)

A SOCIOLOGIA DO CONHECIMENTO ALEMÃ (modernocêntrica)

> In its early formulations, the sociology of knowledge in Germany was dogged by relativist problems and dominated by propagandist intentions. As these elements were gradually eliminated, the focus of the subject turned much more upon the relations of the individual to the social order in general. The effect of variation in the social order was (and is still) largely overlooked. All the focus was upon the interests. The usual typology of knowledge, for example, tends to explain different points of view by reference to the conflicting interests of different sections within modern industrial society. There was no attempt to compare viewpoints based on totally different types of society. […] It is clear that no disciplined comparative framework would emerge from a sociology uninterested in the range of variety among different societies. (Douglas 1986:11)

O SUCESSO DA SOCIOLOGIA NA MODERNIDADE OFUSCOU O PROGRAMA INTELECTUAL DE DURKHEIM

> [S]ociology, though it may have started with philosophical questions and political issues, received its major impulse for development because it provided an indispensable tool for administrative purposes. So Durkheim's intellectual program has languished. (Douglas 1986:11)

FLECK e DURKHEIM – e Goodman e Becker (complementares na luta pela cognição social)

> Fleck elaborated and extended Durkheim's approach. […] In many places Fleck went far beyond Durkheim; in others he missed Durkheim's central synthesizing idea. Both were equally emphatic about the social basis of cognition. […] Fleck went further than Durkheim in analyzing the idea of a social group. He introduced several specialized terms: the thought collective (equivalent to Durkheim's social group) and its thought style (equivalent to Durkheim's collective representations), which leads perception and trains it and produces a stock of knowledge. […] For Fleck the thought style is as sovereign for the thinker as Durkheim held collective representation to be in primitive culture, but Fleck was not talking about primitives. (Douglas 1986:11-3)

> Fleck was not interested in sacredness or in social evolution. Nonetheless he applied the Durkeimian idea of a sovereign thought style to modern society, even to science. This would have horrified Durkheim. As Fleck said, the Durkheimians exhibited "an excessive respect, bordering on pious reverence, for scientific facts" […]. He ridiculed their attitude as a naive obstacle to the building of a scientific epistemology. […] In dealing with the criticisms that affect them both, a good strategy is to get Durkheim and Fleck to make a common defense. Sometimes Fleck has the best answer, sometimes Durkheim. Fighting as allies, back to back, each can supplement with his strength the weakness of the other.(Douglas 1986:14)

> We may be tempted to suppose with Durkheim that scientific ideas force their evidence upon our experiments. We know that this runs counter to the history of science and to the tracing of distinctive thought styles. Fleck was more up-to-date in insisting that a scientific fact does not smack the researchers between the eyes and compel assent. He showed that it took four centuries before scientific advances in other fields were important enough to establish a definitive distinction between different diseases originally clumped together as venereal [.] […] A combined Durkheim-Fleck approach to epistemology prevents either science or religion from being accorded too much privilege. Both science and religion are equally joint products of a thought world; both are improbable achievements unless we can explain how individual thinkers combine to create a collective good. (Douglas 1986:37)

A DIVISÃO DO TRABALHO SOCIAL PARA DURKHEIM

> For Durkheim the division of labor accounts for the big difference between modern and primitive society: to understand solidarity we should examine those elementary forms of society that do not depend on exchange of differentiated services and products. According to Durkheim, in these elementary cases individuals come to think alike by internalizing their idea of the social order and sacralizing it. The character of the sacred is to be dangerous and endangered, calling every good citizen to defend its bastions. The shared symbolic universe and the classifications of nature embody the principles of authority and coordination. In such a system problems of legitimacy are solved because individuals carry the social order around inside their heads and project it out onto nature. However, an advanced division of labor destroys this harmony between morality, society, and the physical world and replaces it with solidarity dependent on the workings of the market. Durkheim did not think that solidarity based on sacred symbolism is possible for industrial society. In modern times sacredness has been transferred to the individual. These two forms of solidarity are the basis of the main typology in Durkheim's theory. (Douglas 1986:13)

DIFERENTES ESTILOS DE PENSAMENTO

> Certainly there is a new interest in distinct styles of reasoning in the history of science. (Douglas 1986:15)

O ARGUMENTO DEFEITUOSO DA AÇÃO COLETIVA (e.g.: Taylor)

> The faulty argument can be expressed as follows. Smallness of scale fosters mutual trust; mutual trust is the basis of community; most organizations, if they do not have a base in individual selective benefits, start as small, trustful communities. Then the special characteristics of community solve the problem of how the social order can ever emerge. Many maintain that after the initial birth through the community experience, the rest of social organization can be explained by complex interlocking of individual sanctions and rewards. [...] Has no one writing on this subject ever lived in a village? Ever read any novels? Tried to raise funds? [...] One may wonder if this is a form of inquiry or an ideology or a quasi-religious doctrine. [...] For the appeal to the small, idealized, intimate community is strong in political rhetoric. [...] Michael Taylor [...] is also among many who believe that small communities are a form of society where rational self-interest does not dictate the outcome of decisions [...]. Given only that it be small enough and stable enough, members of the community are thought freely to make contributions that they would withhold in larger and more fluid conglomerations. This formula is somewhat question-begging, because the issue is how that community gets to be stable. (Douglas 1986:24-5)

A RACIONALIDADE IMPERA EM TODAS AS ESCALAS

> The individual cost-benefit analysis applies inexorably and enlighteningly to the smallest micro-exchanges, with them as well as us. [...] It is when making threats and offers that individuals often invoke the power of fetishes, ghosts, and witches to make good their claims. The resulting cosmology is not a separate set of social controls. In Durkheim's work the whole system of knowledge is seen to be a collective good that the community is jointly constructing. (Douglas 1986:29)

THE EPISTEMO-SOCIAL PROBLEM

> Any attempt to probe the foundations of social order brings to light the paradoxical foundations of thought [...] [,] questioning how systems of knowledge come into being. There is plenty of good reason to think that rational choice theory is inadequate to explain political behavior. Something is going on in civic affairs that the theory of rational choice does not capture. According to the Durkheim-Fleck position, the mistake is to have ignored the epistemological problem. Instead of supposing that a system of

knowledge springs into being naturally and easily, their approach extends skepticism about the possibility of collective action to skepticism about the possibility of shared knowledge and shared beliefs. (Douglas 1986:29-30)

REJECTION OF EMOTIONAL CAUSAL LOOPS (avoid explaining the genesis of rationality by it's suspension)

> The case for ritual stimulating the emotions is weak. Hasn't anyone ever been bored in church? It is important to notice that this clearly goes against Durkheim's principles of sociological method [...]. Social facts must be explained by social facts. Dipping at will into the psychological level was precisely what Durkheim's method aimed to stop. Durkheim evaded his own rules of method by making the sacred depend for its vitality on the emotional excitement of great gatherings. Fleck used the more coherent principle that trust and confidence are prerequisites of communication; he thereby avoided the inconsistency of suspending rationality in order to explain the origin of rational thought in effervescent emotions stirred up by grand-scale public rituals. It is safer to follow Durkheim's teaching, rather than his practice, and safer to reject the functional explanation based on emotions that keep the system going. (Douglas 1986:34-5)

A RELIGIÃO NÃO EXPLICA, ELA PRECISA SER EXPLICADA

> Religion does not explain. Religion has to be explained. We cannot allow Durkheim and Fleck and their friends to brush the main problem aside without more justification. Like everyone else, they must spell out the logical steps of their case or accept the charge of mysticism and appeal to the irrational. (Douglas 1986:36-7)

MERTON, ELSTER E A CRÍTICA DE DOUGLAS AO USO SOCIOLÓGICO DE ETNOGRAFIAS

> Merton originally cited the Hopi rain rite as a case of a ritual that performs the latent social function of rousing emotions that' support solidarity. The dance does not produce rain for the parched desert, but it serves a latent social function. Following the same argument with the same illustration, Elster attributes the Hopi Rain Dance to the Trobrianders, living in fertile, well-watered islands. We suspect that if he had attributed the Trobrianders' ocean-fishing magic to the land-locked Hopi, it would not have mattered. The anthropology does not matter. It is not even interesting enough to be read. In this debate, it serves only as a stalking horse for more serious quarry, whatever that may be. (Douglas 1986:42-3)

CRÍTICA DE DOUGLAS AO DESPREZO DA FILOSOFIA DA CIÊNCIA POR "OUTROS" ESTILOS DE PENSAMENTO

> Philosophers of science go to great trouble to learn the terminology and theories of relativity and quantum physics. Yet they pay scant attention to the social group that is the carrier of a thought style. [...] By classing discoveries in physics or biology as the main object of their research, philosophers of science have already adopted an implicit theory of knowledge. It is even one that has been tried and rejected elsewhere, the idea of a passive perceiver. (Douglas 1986:43)

CONHECIMENTO e RIQUEZA COLETIVA (entrenchment)

> How a system of knowledge gets off the ground is the same as the problem of how any collective good is created. In Durkheim's view the collective foundation of knowledge is the question that has to be dealt with first. According to his theory, the elementary social bond is only formed when individuals entrench in their minds a model of the social order. He and Ludwik Fleck invited trouble when they wrote of society behaving as if it were a mind writ large. It is more in the spirit of Durkheim to reverse the direction and to think of the individual mind furnished as society writ small. The entrenching of an idea is a social process. This is compatible with

the prevailing notion in the philosophy of science that a theory is entrenched by its coherence with other theories. But the burden of the argument is that the whole process of entrenching a theory is as much social as it is cognitive. Conversely, the entrenching of an institution is essentially an intellectual process as much as an economic and political one. (Douglas 1986:45)

ANALOGIA: a fórmula da legitimidade social

> A focus on the most elementary forms of society brings to light the source of legitimacy that will never appear in the balancing of individual interests. To acquire legitimacy, every kind of institution needs a formula that founds its rightness in reason and in nature. Half of our task is to demonstrate this cognitive process at the foundation of the social order. The other half of our task is to demonstrate that the individual's most elementary cognitive process depends on social institutions. (Douglas 1986:45)

> The favorite analogy generalizes everyone's preferred convention. (Douglas 1986:50)

> How does one constructed analogy win over another? How does a system of knowledge get into orbit? How does one good idea compete with another? This is a central issue in the history of science. (Douglas 1986:57)

> Individuals, as they pick and choose among the analogies from nature those they will give credence to, are also picking and choosing at the same time their allies and opponents and the pattern of their future relations. Constituting their version of nature, they are monitoring the constitution of their society. In short, they are constructing a machine for thinking and decision-making on their own behalf. (Douglas 1986:63)

CONVENÇÃO e LEGITIMIDADE: a instável instituição mínima (Lewis)

> Minimally, an institution is only a convention. David Lewis' definition is helpful: a convention, arises when all parties have a common interest in there being a rule to insure coordination, none has a conflicting interest, and none will deviate lest the desired coordination is lost [...]. Thus, by definition, a convention is to that extent self-policing. (Douglas 1986:46)

> We want conventions about pedestrian crossings to exist, but we will violate them ourselves if we can do so with impunity. Enough impatient pedestrians to create a critical mass will march across and hold up the cars in defiance of traffic lights. The conditions for stable conventions to arise are much more stringent than it might seem. Communities do not grow up into little institutions and these do not grow into big ones by any continuous process. For a convention to turn into a legitimate social institution it needs a parallel "cognitive convention to sustain it. (Douglas 1986:46)

INSTITUIÇÃO e LEGITIMIDADE (naturalização)

> In the rest of this volume, institution will be used in the sense of legitimized social grouping. The institution in question may be a family, a game, or a ceremony. The legitimating authority may be personal, such as a father, doctor, judge, referee, or maitre d'hotel. Or it may be diffused, for example, based by common assent on some general founding principle. What is excluded from the idea of institution in these pages is any purely instrumental or provisional practical arrangement that is recognized as such. Here, it is assumed that most established institutions, if challenged, are able to rest their claims to legitimacy on their fit with the nature of the universe. A convention is institutionalized when, in reply to the question, "Why do you do it like this?" although the first answer may be framed in terms of mutual convenience, in response to further questioning the final answer refers to the way the planets are fixed in the sky or the way that plants or humans or animals naturally behave. (Douglas 1986:46-7)

INSTITUIÇÃO e INFORMAÇÃO

> It is at this time fashionable to say that social institutions encode information. They are credited with making routine decisions, solving routine problems, and doing a lot of regular thinking on behalf of individuals. This recent work is very pertinent. However, we find that there are many ways of talking about institutions as organizers of information. […] Human rationality is inherently bounded. Institutional organization is now widely treated as a way of solving problems arising from bounded rationality. Using Oliver Williamson's analysis as a point of departure, Andrew Schotter (1981) has rewritten the description of institutions in information theoretic terms. In this sense, information is not a more or less available commodity; it is whatever is newsworthy. The more that an item of behavior is predictable, the less information it carries. The focus of study has shifted from the flow of information (which is rather like a flow of commodities, in Williamson's sense) to studying the amount of information carried by a particular item seen against the background of standard expectations. This analysis, based on E. E. Shannon's model of information, treats institutional structures as forms of informational complexity. Past experience is encapsulated in an institution's rules so that it acts as a guide to what to expect from the future. The more fully the institutions encode expectations, the more they put uncertainty under control, with the further effect that behavior tends to conform to the institutional matrix: if this degree of coordination is achieved, disorder and confusion disappear. Schotter presents institutions as entropy-minimizing devices. They start with rules of thumb and norms; eventually they can end by storing all the useful information. When everything is institutionalized, no history or other storage devices are necessary: "The institution tells all" […]. […] This is fine and highly congenial to a Durkheimian analysis. The one snag is that it does not say how institutions ever start and get enough stability to do all of that. (Douglas 1986:47-8)

A NATURALIZAÇÃO DAS CLASSIFICAÇÕES SOCIAIS (a coerência como princípio analógico estabilizador da ordem social

> Equilibrium cannot be assumed; it must be demonstrated and with a different demonstration for each type of society. Schotter reminds us that disorder is more probable than order. Before it can perform its entropy-reducing work, the incipient institution needs some stabilizing principle to stop its premature demise. That stabilizing principle is the naturalization of social classifications. There needs to be an analogy by which the formal structure of a crucial set of social relations is found in the physical world, or in the supernatural world, or in eternity, anywhere, so long as it is not seen as a socially contrived arrangement. When the analogy is applied back and forth from one set social relations to another and from these back to nature, its recurring formal structure becomes easily recognized and endowed with self-validating truth. […] Ultimately, the whole system is grounded on nature, on the preeminence of the right hand over the left, of the east over the west, of the north over the south, and so on. The institutions lock into the structure of an analogy from the body. (Douglas 1986:48-9)

> [T]he social convention […] needs a naturalizing principle to confer the spark of legitimacy on what they want to do. The analogy from nature goes as follows: as natural progenitor (say wolf for lion) is to natural offspring (cubs, whelps), so live father is to live son and dead father to dead son. Extending backwards, it can justify the same relation invoked between dead father's father's father with dead father's father and dead father, according to the scale of the living persons ready to be involved in the legitimated social arrangements. […] Thus the institutions survive the stage of being fragile conventions: they are founded in nature and therefore, in reason. Being naturalized, they are part of the order of the universe and so are ready to stand as the grounds of argument. Two examples […] of these naturalized principles of social organization

[are:] [...] the foundation of a primitive state on the analogy between the relation of female and male with the relation of left and right[;] [...] [and] the foundation of a lineage on the analogy of the relation of genitor to offspring. Many more such analogies that confer natural status on social relations abound in anthropological literature. (Douglas 1986:52)

> By using formal analogies that entrench an abstract structure of social conventions in an abstract structure imposed upon nature, institutions grow past the initial difficulties of collective action. [...] We should now consider how analogies from nature are found and, above all, how they are agreed upon. This points back to the logically prior question of how individuals ever agree that any two things are similar or dissimilar. Where does sameness reside? The answer has to be that sameness is conferred on the mixed bundle of items that count as members of a category; their sameness is conferred and fixed by institutions. (Douglas 1986:53)

> In the work of trying to understand, disorder and incoherence are more probable. Whenever a high degree of logic and complexity is found, it is a matter for surprise and needs to be explained. [...] A truly complex ordering is the result of sustained effort. Some inducement must exist to explain why the effort is made. [...] Let us assume that, in the absence of heavy demand (meaning, in the absence of inducements for specialized concentration), classification will meet minimum needs by taking the path of least effort. That path will quickly lead to a loose collection of social analogies drawn upon nature, and there it will peacefully come to rest. (Douglas 1986:56)

> Once a social system has been founded in reason and nature, we can see how cognitive energy is saved by tracing the career of a successful theory. First, on the principle of cognitive coherence, a theory that is going to gain a permanent place in the public repertoire of what is known will need to interlock with the procedures that guarantee other kinds o£ theories. At the foundation of any large cognitive enterprise are some basic formulae, equations in common use, and rules of thumb. In science such shared techniques of validating spread across different subdisciplines. For example, the mathematics of seepage is used in mineralogy and in ophthalmology. So also the Nuer use the same formula for marriage and blood debts. The anchoring of a set of theories in one.field imparts authority to a set elsewhere, if it can be anchored by the same procedures. This is just as true for social forms of validation as for scientific ones. [...] Most rediscovered theories turn out not to have built originally on the current cognitive infrastructure and so to have missed savings in energy. Often when a new scientific discovery has been rejected and left to lie inert until later, it is precisely an idea which lacked formulaic interlocking with normal procedures of validation. The best chance of success is to confront the major public concerns and to exploit the major analogies on which the socio-cognitive system rests. (Douglas 1986:76-7)

> A new discovery has to be compatible with political and philosophical assumptions if it is to get off the ground in the first place, to say nothing of being remembered afterwards. (Douglas 1986:80)

> One well-instituted tool can easily ruin the career of a theory that cannot use it. One well-connected unifying method can drive out an idea that does not depend upon its accredited formula. (Douglas 1986:89)

> Only one term sums up all the qualities that enable a speculation to become established and then to escape oblivion; that is the principle of coherence. To employ the same interlocking methodology that holds other clumps of scientific activity together is essential. With this secure, much else will be added; individual researchers will know how to ratify their private claims and how to

attract collaborators to collective action; they will know what can safely be overlooked and what must be remembered.
The principle of coherence is not satisfied by purely cognitive and technological fit. It must also be founded on accepted analogies with nature. This means that it needs to be compatible with the prevailing political values, which are themselves naturalized. [...] Inevitably, if it seems that an analogy does match nature, it is because the analogy is already in use for grounding dominant political assumptions. It is not nature that makes the match, but society. (Douglas 1986:89-90)

> If Rivers had a great success for his colonial model of psychic control and if Bartlett neglected the project of identifying social pressures on the cognition of modern man, both the success of the one and the diversion of the other's intent can be explained by the power of a dominant naturalizing metaphor. The metaphor of evolutionary progress in nature was so congenial that any research based on it could claim the benefits of general coherence. (Douglas 1986:90)

> A thinker who classifies the phenomena to be examined according to known and visible institutions saves himself the trouble of justifying the classification. It is already the normal conceptual scheme for those who live in and think through similar institutions. (Douglas 1986:94)

> Any institution that is going to keep its shape needs to gain legitimacy by distinctive grounding in nature and in reason: then it affords to its members a set of analogies with which to explore the world and with which to justify the naturalness and reasonableness of the instituted rules, and it can keep its identifiable continuing form. [...] Any institution then starts to control the memory of its members; it causes them to forget experiences incompatible with its righteous image, and it brings to their minds events which sustain the view of nature that is complementary to itself. It provides the categories of their thought, sets the terms for self-knowledge, and fixes identities. All of this is not enough. It must secure the social edifice by sacralizing the principles of justice. [...] This is Durkheim's doctrine of the sacred. All the other controls exerted by institutions are invisible, but not the sacred. According to Durkheim, the sacred is to be recognized by these three characteristics. First, it is dangerous. If the sacred is profaned, terrible things will happen; the world will break up and the profaner will be crushed. Second, any attack on the sacred rouses emotions to its defense. Third, it is invoked explicitly. There are sacred words and names, sacred places, books, flags, and totems. Such symbols make the sacred tangible, but they in no way limit its range. Entrenched in nature, the sacred flashes out from salient points to defend all the classifications and theories that uphold the institutions. Fot Durkheim, the sacred is essentially an artifact of society. It is a necessary set of conventions resting on a particular division of labor which, of course produces the needful energy for that kind of system [...]. The sacred makes a fulcrum on which nature and society come into equilibrium, each reflecting the other and each sustaining the known. (Douglas 1986:112-3)

INTERVENÇÃO (e não representação)

> Fleck insisted that the development of knowledge depends on how the knowledge is expected to intervene in practical life. Thinking has more to do with intervening than with representing (Hacking 1983). The same applies to ancestors: they are known by their interventions. (Douglas 1986:50)

SÍNTESE DO ARGUMENTO ATÉ AQUI: o dispositivo cognitivo que fundamenta a instituição é a analogia naturalizante

> It is well said that individuals suffer from the bounding of their rationality, and it is true that by making organizations they extend the limits of their capacity for handling information. We have shown

how institutions need to be established by a cognitive device. Mutual convenience in multiple transactions does not create enough certainty about the other person's strategies. It does not justify the necessary trust. The cognitive device grounds the institution at once in nature and in reason by discovering that the institutions formal structure corresponds to formal structures in non-human realms. (Douglas 1986:55)

A SIMILARIDADE É UMA INSTITUIÇÃO

> First, for discourse to be possible at all, the basic categories have to be agreed on. Nothing else but institutions can define sameness. Similarity is an institution. Elements get assigned to sets where institutions find their own analogies in nature. (Douglas 1986:55)

> To make a fresh start from the side of cognition, consider how the most elementary logical idea itself depends on social interaction. This is the idea of similarity or resemblance. When several things are recognized as members of the same class, what constitutes their sameness? [...] Comparison of cultures makes it clear that no superficial sameness of properties explains how items get assigned to classes. Everything depends on which properties are selected. (Douglas 1986:58)

> Institutions bestow sameness. Socially based analogies assign disparate items to classes and load them with moral and political content. (Douglas 1986:63)

EMOTIONAL ENERGY

> On the one hand, the emotional energy for creating a set of analogies comes from social concerns. On the other hand, there is a tension between the incentives for individual minds to spend their time and energy on difficult problems and the temptation to sit back and let founding analogies of the surrounding society take over. (Douglas 1986:55)

CIÊNCIA e SOCIEDADE

> However much they try to insulate their work, scientists are never completely free of their own contemporary society's pressures, which are necessary for creative effort. Scientific theory is the result of a struggle between the classifications being developed for professional purposes by a group of scientists and the classifications being operated in a wider social environment. Both are emotionally charged. Both kinds of classification depend on social interaction. One (that of the scientists) makes a determined effort to specialize and refine its concepts so as to make them fit for use in a discourse that differs from though it is contained within the entrenched ideas of the larger, encompassing social group. (Douglas 1986:56)

> [T]he scientific formulae that emerge always carry the marks of their social origins. (Douglas 1986:56)

CLASSIFICAÇÕES POPULAR vs. CIENTÍFICA (objetivos diferentes)

> A foreign culture may work without having a good scientific classification. The senses in which it may be said to work are political, economic, social, ecological. For the intermeshing of practical purposes, folk classification makes a world that is reliably intelligible and predictable enough to live in. The objectives of folk classification are quite different from those of scientific classification; the latter is developed to express specialized theory generated in specialized institutions, which also have their own foundational ideas and are also grounded in nature. Each group of scientists is able to resist the temptation to rest upon the founding analogies of the outside society only to the extent that it is insulated from it. [...] But this archaic religious classification and many other contemporary ones known to anthropologists owe their divisions much more to their capacity to model the interactions of the members of society than to a disinterested curiosity about the

workings of nature. There is a fundamental shift to a scientific classification from a socially inspired one. The striving for objectivity is precisely an attempt not to allow socially inspired classifications to overwhelm the inquiry. There can be no smooth transition from the socially inspired to the scientific classification. The first cannot develop into the second by pressing deeper and deeper beneath the surface of things in the quest for knowledge, because the quest for knowledge is not one of its objectives (Levi-Strauss 1962). (Douglas 1986:58-9)

DIFERENTES DIFERENÇAS (natureza/grau)

> Somehwere the argument is flawed. How can the ability to discriminate between shades of yellow, or to make other judgments of nearness or distance, or of other quality differences, ever lead to putting items into classes? To recognize a class of things is to polarize and to exclude. It involves drawing boundaries, a very different activity from grading. To move from recognizing degrees of difference to creating a similarity class is a big jump. The one activity can never of itself lead toward the other, any more than institutions can evolve toward a complete organizing of information by beginning from spontaneous self-policing conventions. (Douglas 1986:60)

> A theory of the world would need to start with dividing, not with grading. (Douglas 1986:62)

O DENTRO E O FORA (a máquina de guerra de Melanie Klein)

> In Melanie Klein's account of an infant's first attempts to find order in the world, the dominant preoccupation is [...] the problem of inductive rightness. It [the baby] needs to pick out of the crowd of present sensations some practical basis for projecting forward (to use Nelson Goodman's term), a version of the world that works (Goodman 1983). The baby has no habits to rely on, and there is no existing version to be remade. [...] Matching samples will not lead to discriminating kinds. According to Klein, the urgent thing is to know which painful and pleasant experiences come from inside and which from outside. The first basis of projectible kinds is the difference between self and not-self (Klein, 1975). (Douglas 1986:62)

> The questions it [the infant] asks resemble military intelligence. It needs to know whether the source of milk, if external, is one breast or several, and if several, how to distinguish allies from enemies? Is this the good breast or the bad breast? Is it for me or against me? The earliest social interaction lays the basis for polarizing the world into classes. Survival depends on having enough emotional energy to carry this elementary classificatory enterprise through all the hard work needed to build a coherent, workable world. Social interaction supplies the element missing in the natural history account of the beginnings of classification. (Douglas 1986:62-3)

O INTELECTUAL, O SOCIAL E O MORAL-ENERGÉTICO (informação)

> The institution works as such when it acquires a third support from the harnessed moral energy of its members. More of this in the last chapter. All three processes [intellectual, social, and moral energy] are simultaneously at work. (Douglas 1986:63)

> Information theory draws our attention particularly to divergent patterns. It assumes that for any given pattern a prior buildup of energy is needed. A pattern of given complexity, once stabilized, uses less energy than was required to bring it into existence. For example, heat under a pan of water takes time before the water begins to swirl and bubble. If more energy is pumped in, it has to be used up by new patterns of complexity. So if the heat under the pan is increased, the water will swirl around in a more and more complex pattern. There has to be some way of dissipating any energy that is in excess of what is necessary to maintain the pattern (Prigogine 1980). Over and above a certain point, the extra input of energy will not be able to be absorbed by increasing complexity, and there will

be a radical change in the whole pattern. For example, the water will turn into steam. To write of institutions as complex patterns of information [...], and to think of the relative efficiency of their channels of communication [...], should lead to considering the amount of energy used for making a particular kind of institution and how it is deployed in a more complex or less complex pattern. And from here it should lead to assessing the volume of transactions that it is capable of handling. Otherwise, information theory in political science is mere academic window dressing, a new favorite metaphor to replace the outdated functionalist metaphor of the 1950s. (Douglas 1986:112)

INÉRCIA INSTITUCIONAL

> At this stage we can start to trace the effects of turning individual thought over to an automatic pilot. First, there is a saving of energy from institutional coding and inertia. [...] For example, the common English word, man, with its archaic plural, men, has stood out against the onward sweep of plural endings in s. [...] Thanks to the weight of institutional inertia, shifting images are held steady enough for communication to be possible. (Douglas 1986:63)

A TEORIA FEMINISTA NA ANTROPOLOGIA

> Feminist theory in anthropology has had a lot to say about these equations as justifying the subjection of women (Strathern 1980). Even when the feminine gender is associated with the more esteemed side, it still can be used to justify the women carrying the heaviest physical burdens. (Douglas 1986:64)

O PROBLEMA DE HUME

> David Hume's teaching that justice is an artificial virtue gives a lot of trouble. The idea that justice is a necessary social construct is exactly parallel to Durkheim's idea of the sacred, but Hume clearly refers to us, ourselves [not aborigines]. He brings our idea of the sacred under scrutiny. Our defensive reaction against Hume is exactly what Durkheim would predict. We cannot allow our precepts of justice to depend on artifice. Such teaching is immoral, a threat to our social system with all its values and classifications. Justice is the point that seals legitimacy. [...] For this very reason, it is difficult to think about it impartially. In spite of a wide belief in the modern loss of mystery [*e.g.* Weber], the idea of justice still remains to this day obstinately mystified and recalcitrant to analysis. If we are ever to think against the pressure of our institutions, this is the hardest place to try, where the resistance is strongest. On this subject anthropologists have a privileged position for they record many diverse social forms each venerating its particular idea of justice. [...] Hume's idea of the artificial virtues is integral to his skeptical program (1739, 1751). It was part of his attack on all theories of innate ideas, whether of causality, natural law, or private property. His radical constructivism makes him exactly the anthropologists' philosopher. When it is a matter of finding logical structures in nature, Hume says that all we ever see there are frequencies, and from these we form habits and expectations. When it is a matter of natural justice, all we can ever know is that we need regulated interactions; to meet the need we develop principles. Accordingly, the idea of justice is not a natural response as to an emotion or to an appetite. As an intellectual system, it has a kind of second-order naturalness because it is a necessary condition for human society. Fabricated precisely for the purpose of justifying and stabilizing institutions, it is founded on conventions in exactly the sense quoted above from David Lewis (1969). Thus, no single element of justice has innate rightness: for being right it depends upon its generality, its schematic coherence, and its fit with other accepted general principles. Justice is a more or less satisfactory intellectual system designed to secure the coordination of a particular set of institutions. [...] If this turns out to be logically unassailable and yet unacceptable to philosophers who are otherwise strong on logic we shall chalk it up as another instance of the power of the sacred to

rouse an emotional defense. [...] Hume's approach does not allow us to refuse the name of justice to a system merely because it does not accord with our own. Philosophers can hardly dismiss all civilizations antecedent to our own as defective in moral judgment without seeming to be biased. [...] When Hercules Poirot caught the Countess Rossakoff with stolen jewels, she denied any intuitive rightness of private property: "And what I feel is, why not? Why should one person own a thing more than another?" (Christie 1935). The trouble with trying to defend an immutable principle of justice is that not everyone sees the self-evident thing. Rules that now seem to us moderns as monstrously unjust did not strike our forebears as wrong. Slavery and the subjugation of women are vulnerable to the same arguments that Hume used against the intuitive right to property. (Douglas 1986:113-4)

> Given that equality as a natural right or as a universal principle of justice is still the most prominent difference between Western and many other systems of justice, it is not enough simply to dismiss all of the latter as obviously unjust. (Douglas 1986:116)

> Yet, however vehemently we assert our own principles of justice, they are still the principles that have emerged over the last two hundred years, along with the emergence of an economic system based on individual contract. Turning itself from a horizontal pattern of integration to a vertical one, which depends on drawing independent individuals up from bottom to top, the whole information system has to be transformed. When the perturbation has reached a certain point, the dissipative structures can no longer hold the pattern. First, the founding analogies need revision. Louis Dumont has traced the eighteenth-century effort to refocus its ideology away from organic metaphors. He shows that Mandeville's parable of the independent industrious individual bees was a landmark in the turning away of Western thought from hierarchical models of society toward justifying individualism [...]. [...] When the analogy with nature has been changed, the system of justice also needs revision. Now it has to promote the vertical movement of individuals instead of containing them within their horizontal layers. The result has been the sacralization of a society based on an extravagant use of energy unprecedent in the history of the world. (Douglas 1986:118-9)

> Without appeal to religion, intuitionism, or innate ideas, it is very hard to defend a substantive principle of justice as universally right. (Douglas 1986:117)

> In other words, this feeling is ultimately incommunicable. (Douglas 1986:119)

> Rudolph Otto's justification of religious truth: if the reader has never had a mystic experience, if he has never felt the Mysterium Tremendum, if he is stranger to the sense o£ the numinous, then, says Otto the Lutheran theologian, nothing I can say will convince him: the feeling is incommunicable. (Douglas 1986:119)

> According to Hume's theory, the need for a concept of justice would only arise in certain circumstances. (Douglas 1986:117)

> According to Hume, the artificial virtues are to be known by their internal coherence within an abstract system that harmonizes everyday interactions in a particular society. (Douglas 1986:119)

> On Hume's principles we can say that one system is more just than another. We can say it on two counts, one logical and one practical. According to his teaching, a system of justice is devised expressly for providing coherent principles on which social behavior can be organized. So we can compare systems of justice in respect of their coherence. This is the regular task of historical jurisprudence. Judicial reform is often justified on grounds of incoherence among the principles being used. According to Hume, arbitrariness defeats the essential purpose of justice. We can compare the amount of

arbitrary rules. So there is no problem on this issue. On the practical count, we can start by asking how well a system of justice actually performs the task of providing abstract principles for regulating behavior. It could be too arcane, too complex, and too ramifying to be understood. [...] Or, on another kind of practical test, is the system of justice efficient? Are the courts too remote from the centers of population? Jurists make these and other comparisons of systems of justice all the time. In doing so they are not obliged to apply the validating principles of their own institutions, not at all. The tests of coherence and non-arbitrariness, complexity and practicality, are not subjective preferences. It is as straightforward to study human systems of justice objectively as it is to measure the length of human feet from heel to toe. Systems can be compared as systems. The one thing that it is not possible to do is to pick a particular virtue, say kindness to animals or to the aged, or equality, and find a way of proving that it is always and ineluctably right and best. [...] [R]ecognizing the social origin of ideas of justice does not commit us to refraining from judging between systems. They can be judged better or worse according to the good sense we can make of their assumptions. (Douglas 1986:129-1)

REVISÃO como ADEQUAÇÃO

> The aim of revision is to get the distortions to match the mood of the present times. (Douglas 1986:69)

MEMÓRIA PÚBLICA (a condição de nosso pensamento)

> Public memory is the storage system for the social order. Thinking about it is as close as we can get to reflecting on the conditions of our own thought. (Douglas 1986:70)

> As Merton's example shows, competitive social systems are weaker on memory than ascriptive ones. This must be so because the competition drives out some players and brings upstarts to the top, and with each change of dynasty, public memory necessarily gets rearranged. By contrast, complex hierarchical society will need to recall many reference points in the past. [...] Coherence and complexity in public memory will tend to correspond to coherence and complexity at the social level. This is what Halbwachs taught. The converse follows: the more the social units are simple and isolated, the simpler and more fragmentary the public memory will be, with fewer benchmarks and fewer levels of ascent to the beginning of time (Rayner 1982). [...] The competitive society celebrates its heroes, the hierarchy celebrates its patriarchs, and the sect its martyrs. (Douglas 1986:80)

> Weak or strong, memory is sustained by institutional structures. (Douglas 1986:81)

MORE THAN A THEORY

> A theory about how the world should be run will survive competition if it is more than a theory, for example, if it can intervene to support individual strategies to create a collective good. (Douglas 1986:73)

A IMPORTÂNCIA DE ESQUECER

> Certain things always need to be forgotten for any cognitive system to work. There is no way of paying full attention to everything. (Douglas 1986:76)

O REJEITADO É MAIS VISÍVEL QUE O VALORIZADO

> A sociological theory of rejection can be more securely based than a sociological theory of value because of the public nature of penalties and prohibitions which follow on negative attitudes. The same is true for our problem. The thinkability of the social order is beset with infinite regress. Institutional influences become apparent through a focus on unthinkables and unmemorables, events that we can note at the same time as we observe them slipping beyond

recall. (Douglas 1986:76)

O PROBLEMA DA ORIGINALIDADE NA CIÊNCIA (economia energética por analogia estrutural; competição por recursos escassos=originalidade)

> The strategies to validate scientists' claims use originality as a main criterion for prizes and positions. The belief in a first discoverer is nothing without the prizes and renown. The custom of naming immediately gives a major advantage to claimed originality and a disadvantage to the fact of rediscovery. What seems dysfunctional when enraged scientists make a public display of their vanity may be counted as the cost of keeping the race open to the swift. But competition is always costly in human terms. (Douglas 1986:77)

O PARADOXO DE CONDORCET

> When it is recognized that a majority could prefer A to B, and B to C, but C to A, confidence in the will of something called "the majority" is eroded. (Douglas 1986:79)

AMNESIA PROFISSIONAL da PSICOLOGIA

> [P]sychologists are institutionally incapable of remembering that humans are social beings. As soon as they know it, they forget it. They often remind one another of how artificial the parameters are that they have set around their subject matter. Famous psychologists keep upbraiding their fellows for despising or ignoring institutional factors in cognition. The literature of the social sciences is sprinkled with rediscoveries of that very idea. (Douglas 1986:81)

> James Coleman is another who was prominent in making efforts in the 1950s to treat qualities of the social situation as selective principles for acceptable information. [...] Coleman anticipated that the new approach would focus on the fate of information transmitted through more integrated and less integrated social networks [...]. However, network analysis has proceeded without bringing the parallel and necessary analysis of attitudes and values to the same heights of sophistication, and no systematic synthesizing theory has been developed. (Douglas 1986:82)

> Psychologists [...] are so committed to the assumption that individual psychic development is restricted by social conventions that they see all conventional and institutional constraints as wrongful. [...] For psychologists, the idea that stabilizing factors could be useful for cognitive and emotional development is unthinkable. [...] [I]t is professionally impossible in psychology to establish the notion that institutional constraints can be beneficial to the individual. The notion can be scouted, but it cannot enter the memorable corpus of facts. (Douglas 1986:82-3)

BARTLETT, RIVERS, DURKHEIM: casos exemplares de suas próprias descobertas sobre os pressupostos do pensamento

> In his earlier book, *Psychology and Primitive Culture* (1923), Bartlett had taught emphatically that the individual is always a social individual and that social influences selectively control cognition and emotion. He was already drawing heavily on Rivers' work and comparing something he and Rivers called "primitive comradeship" with the "collective conscience" of the writers of the *L'Annee Sociologique*. He described how in primitive society conflict is averted by instituted separation – a pregnant idea – and how curiosity is brought under institutional control. [...] One reason why this interest in institutional control on thinking never became more than a speculation lies undoubtedly in certain current evolutionary assumptions. Both Bartlett and Rivers thought (along with Durkheim) that social control of the free ranging curiosity of individuals was stronger in primitive society. The primitive individual was altogether less of an individual and more of an automaton obeying group cues. This evolutionary assumption was quite

congenial to the period of colonial empire and provided the latter with its naturalizing analogies. It was self-evident that modern man had lost his natural sensitivity to group signals, just as the human race had lost the sense of smell so useful in lower animal orders. (Douglas 1986:86)

COMO PENSAM AS INSTITUIÇÕES?

> [A]n institution cannot have purposes. […] Only individuals can intend, plan consciously, and contrive oblique strategies. […] Institutions systematically direct individual memory and channel our perceptions into forms compatible with the relations they authorize. They fix processes that are essentially dynamic, they hide their influence, and they rouse our emotions to a standardized pitch on standardized issues. Add to all this that they endow themselves with rightness and send their mutual corroboration cascading through all the levels of our information system. No wonder they easily recruit us into joining their narcissistic self-contemplation. Any problems we try to think about are automatically transformed into their own organizational problems. The solutions they proffer only come from the limited range of their experience. If the institution is one that depends on participation, it will reply to our frantic question: "More participation!" If it is one that depends on authority, it will only reply: "More authority!" Institutions have the pathetic megalomania of the computer whose whole vision of the world is its own program. For us, the hope of intellectual independence is to resist, and the necessary first step in resistance is to discover how the institutional grip is laid upon our mind. (Douglas 1986:92)

> The high triumph of institutional thinking is to make the institutions completely invisible. When all the great thinkers of a period agree that the present day is like no other period, and that a great gulf divides us now from our past, we get a first glimpse of a shared classification. Since all social relations can be analyzed as market transactions, the pervasiveness of the market successfully feeds us the conviction that we have escaped from the old non-market institutional controls into a dangerous, new liberty. When we also believe that we are the first generation uncontrolled by the idea of the sacred, and the first to come face to face with one another as real individuals, and that in consequence we are the first to achieve full self-consciousness, there is incontestably a collective representation. Recognizing this, Durkheim would have to concede that primitive solidarity based on shared classification is not completely lost. (Douglas 1986:98-9)

> How can we possibly think of ourselves in society except by using the classifications established in our institutions? (Douglas 1986:99)

> At the same time as institutions produce labels, there is a feedback of Robert Merton's self-fulfilling kind. The labels stabilize the flux of social life and even create to some extent the realities to which they apply. […] People have always been labeling each other, with the same consequences – labels stick. […] As fast as new medical categories (hitherto unimagined) were invented, or new criminal or sexual or moral categories, new kinds of people spontaneously came forward in hordes to accept the labels and to live accordingly. The responsiveness to new labels suggests extraordinary readiness to fall into new slots and to let selfhood be redefined. […] It is a […] dynamic process by which new names are uttered and forthwith new creatures corresponding to them emerge. […] [P]eople are not merely re-labeled and newly made prominent, still behaving as they would behave whether so labeled or not. The new people behave differently than they ever did before. (Douglas 1986:100)

> [I]nstitutions survive by harnessing all information processes to the task of establishing themselves. The instituted community blocks personal curiosity, organizes public memory, and heroically imposes certainty on uncertainty. In marking its own boundaries it

affects all lower level thinking, so that persons realize their own identities and classify each other through community affiliation. Since it uses the division of labor as a source of metaphors to affirm itself, the community's self-knowledge and knowledge of the world must undergo change when the organization of work changes. When it reaches a new level of economic activity new forms of classification must be designed. But individual persons do not control the classifying. It is a cognitive process that involves them in the same way as they are involved in the strategies and payoffs of the economic scene or in the constitution of language. Individual persons make choices within the classifications. Something else governs their choices, some need of easier communication, a call for a new focus for precision. The change will be a response to the vision of a new kind of community. (Douglas 1986:102)

> Something happens to the insides of our heads when a different kind of organization had made obsolete the old classifications [...]. The change is not a deliberate or conscious choice. Institutions veil their influence, so that we hardly notice any change. (Douglas 1986:103)

> The individual tends to leave the important decisions to his institutions while busying himself with tactics and details. (Douglas 1986:111)

> The thing to be explained is how institutions ever start to stabilize. To become stable means settling into some recognizable shape. (Douglas 1986:111)

> The most profound decisions about justice are not made by individuals as such, but by individuals thinking within and on behalf of institutions. The only way that a system of justice exists is by its everyday fulfillment of institutional needs. If this be conceded, it would appear that the rational-choice philosophers fail to focus on the point at which rational choice is exercised. Choosing rationally, on this argument, is not choosing intermittently among crises or private preferences, but choosing continuously among social institutions. It follows that moral philosophy is an impossible enterprise if it does not start with the constraints on institutional thinking. So let no one take comfort in the thought that primitives think through their institutions while moderns take the big decisions individually. That very thought is an example of letting institutions do the thinking. (Douglas 1986:124)

DURKHEIM e WEBER

> The social theory of Max Weber and that of Durkheim illustrate respectively the mixed advantages of leaving institutions to do their own classifying (Weber), and the difficulties of inspecting how they do it (Durkheim). [...] Both Durkheim and Weber focused their inquiry on rationality and specifically on the relation between ideas and institutions. For both the main interest was the emergence of individualism as a philosophical principle. In Durkheim's case the task was to explain the general question of individual commitment to the social order – the issue of solidarity, which is the same as collective action. He found the answer in shared classification. Durkheim's work on the social origin of classification affords an independent method of self-inspection. It provides a technique for analysis that could be made proof against institutional distortion. For Weber, the task was to explain the prevalence of particular ideas and ideals at a particular stage of institutional development. These remarks already show that Durkheim had placed his inquiry at a higher level of abstraction. (Douglas 1986:93)

> Weber's sociological golden dawn is a counterpart of Frazer's mythological golden bough and of River's colonial model of the psyche (1920). If they spoke in chorus, it was because the same institutions were doing their thinking. [...] As a contemporary, Durkheim fell into all these institutional traps. He started from the same basic distinction between primitives and moderns and also

> regarded them as using different mental procedures. It would be stupid to suggest that he did not also subscribe, also with mixed feelings, to the idea of a vanished golden dawn of mankind. The saving grace for him was not to be interested in reconstructing the various phases of evolution that led from the beginning to now. Thus his theory is less heavily loaded with the institutionally given presuppositions. His evolutionary model only has two stages: the primitive stage of mechanical solidarity that is based on shared classifications and the modern stage of organic solidarity based on economic specialization and exchange. [...] [W]e are left with two forms of social commitment, one classificatory and one economic. Even Durkheim did not believe that classificatory solidarity was uniquely associated with undeveloped stages of the division of labor, for he devoted much attention to standardized ideas of right and wrong in modern society. (Douglas 1986:95-6)

O PROGRAMA DE DURKHEIM

> Durkheim's program of research starts from the possibility that either there is a good fit or a bad fit between the public and the private classifications. If the fit is bad, it can be for two different reasons: the individual may reject the public classifications and refuse to let them have any hold upon his own judgments; or the individual may accept the worth of the public classifications, but know that he or she is incapable of meeting the expected standards. Lastly, the public classifications may be relatively coherent or in a state of incoherence. (Douglas 1986:97-8)

> What constitutes deviance cannot be asserted until the dimensions of conformity have been delineated. To assess degrees of conformity among ourselves, we must make the same meticulous count of categories; tracing the way the physical world is turned into a projection of the social world. It is the same for us as for the Eskimos and the Australians; we must use the same method of constructing the north and the south, the right and the left, all loaded with the patterns of dominance, congregation and dispersal, for ourselves as well as for the Chinese and the Zuni Indians. (Douglas 1986:98)

NOMINALISMO SOCIOGENÉTICO

> Hacking is drawing a distinction between the effect of description on inanimate objects and the effect of names on humans. [...] However, the contrast is not so clear [...]. The real difference may be that life outside of human society transforms itself away from the labels in self-defense, while that within human society transforms itself towards them in hope of relief or expecting advantage. (Douglas 1986:101)

> The interaction [...] goes round, from people making institutions to institutions making classifications, to classifications entailing actions, to actions calling for names, and to people and other living creatures responding to the naming, positively and negatively. [...] Having accepted that persons classify, we can also recognize that their personal classifying has some degree of autonomy. (Douglas 1986:101-2)

> This is how the names get changed and how the people and things are rejigged to fit the new categories. First the people are tempted out of their niches by new possibilities of exercising or evading control. Then they make new kinds of institutions, and the institutions make new labels, and the label makes new kinds of people. (Douglas 1986:108)

INSTITUIÇÕES INDUSTRIAIS vs. COMUNITÁRIAS

> Large-scale industrial processes are their own institutions. They cannot be embedded in the patterns of local, community control. (Douglas 1986:108)

ENGAGED RESEARCH METHODOLOGY

> The comparison of classifications as an index of other things that are happening in our own society provides a small, provisional ladder of escape from the circle of self-reference. We can look at our own classifications just as well as we can look at our own skin and blood under a microscope. We can recognize regularities appearing in whole arrays of classificatory work, just as well as grammarians can study regularities in syntax and phonetic shifts. There is nothing self-contradictory or absurd in taking a systematic look at the classifications we make of ourselves. The logical difficulties start when we try to develop value-free ideas about the good society. And yet these difficulties must be met if we are not to leave the whole inquiry in a stew of philosophical relativism. It is not at all the purpose of this book to teach that because institutions do so much of our thinking there can be no comparisons between different versions of the world, still less to teach that all versions are equally right or wrong. (Douglas 1986:109)

SOCIOGÊNESE DA JUSTIÇA

> [T]he functioning of a society depends on some degree of coherence and […] an abstract summary of the interlocking principles on which it works promotes coordination. Once formulated the artifice acquires venerability. Durkheim could explain why […] justice seems to have been there forever. It had to have existed long before humans came into the world; so it appears old and immutable as one of nature's fixtures, above challenge. (Douglas 1986:120)

O CALCANHAR DE AQUILES DE DOUGLAS (o mesmo de DURKHEIM): a naturalização implícita da ideia moderna de natureza

> At this point the question of moral relativism has merged into questions about what is real and what illusionary in the world. I hope there is no need to get into the argument about realism. What has been said above does not throw into doubt that there are objective tests of right and wrong versions of the world and how it works. For example, imagine a system of justice that punished people for what they are alleged to have done in other people's dreams. It would not be difficult to show that such a system draws the lines of responsibility according to a wrong version of reality and a wrong version of human accountability – so much so that it could not be organized coherently on any practical issue. The way that humans are, the facts that they walk upright and cannot be in two places at once, are incorporated as part of any system of justice. Some experience and study of the conditions of life have gone into the background of the thinking. All that is being argued here and throughout this book is that this cumulative experience of the world should explicitly incorporate the social nature of cognition and judgment. (Douglas 1986:121-2)

COMPORTAMENTO DE CRISE CORRESPONDE ÀS INSTITUIÇÕES

> The preferred assumption, which implies that humans are not essentially social beings, is strong enough to prevent us seeing how they actually behave. What happens when law is abrogated? Does nature take over? […] Hume himself supposed that in a famine each would seize what he needed to survive, throwing concepts of private property to the winds. Part of his demonstration of their artificiality was to show that criteria of justice would be suspended when it is a matter of starvation. Other philosophers agree. But starving people do not rise up and seize the food that is there. Sheer force is not all that stops them from looting the stores. Within the family or village in such a crisis who starves and dies or who eats and lives is neither quite random nor dependent on force. Strongest and most numerous do not always take all when the tragic crisis arrives. History shows that famine does not automatically revoke conventions. It does not usher in something like a natural law of equal rights. By adopting such an assumption we naturalize our own ideas of equity; it is as if we assume that when nature takes over, she does what we knew we ought to have done all along, that is, to

distribute equally. Crisis behavior depends on what patterns of justice have been internalized, what institutions have been legitimated. (Douglas 1986:122)

> To give out the food as quickly as possible, existing channels of distribution would be the most efficient and most acceptable to the famine-stricken country. But no! As soon as the local people are brought into the relief scheme, the food gets diverted. The poorest are always the most vulnerable in a famine. But the food does not reach them. Hoarding, stealing, exploiting, recrimination, and self-righteous indignation are part of the grim story of famine relief. (Douglas 1986:122)

A INÉRCIA DAS INSTITUIÇÕES

> When individuals disagree on elementary justice, their most insoluble conflict is between institutions based on incompatible principles. The more severe the conflict, the more useful to understand the institutions that are doing most of the thinking. Exhortation will not help. Passing laws against discrimination will not help. It did not help African women for the League of Nations to pass resolutions against polygamy or female clitoridectomy. Preaching against wife battering and child abuse is not more likely to be effective than preaching against alcohol and drug abuse, racism, or sexism. Only changing institutions can help. We should address them, not individuals, and address them continuously, not only in crises. [...] Between institutions of the same kind, based on the same analogies from nature, and sealed with the same ideas of justice, diplomacy has a chance. But diplomacy between different kinds of institutions will generally fail. Warnings will be misread. Appeals to nature and reason, compelling to one party, will seem childish or fraudulent to the other. (Douglas 1986:125-6)

ESCOLHA x AUTO-CONHECIMENTO

> Once it were conceded that legitimated institutions make the big decisions, much else would be changed. [...] Instead of moral philosophy starting from a notion of the human subject as a sovereign agent for whom free choice is the essential condition, Sandel suggests that the human agent is essentially one who needs to discover (not choose) his ends, and that the community affords the means of self-discovery. Instead of being centered on the conditions of choice, a different kind of moral philosophy would be centered on the conditions of self-knowledge. (Douglas 1986:126-7)

GRAND FINALE

> Only by deliberate bias and by an extraordinarily disciplined effort has it been possible to erect a theory of human behavior whose formal account of reasoning only considers the self-regarding motives, and a theory that has no possible way of including community-mindedness or altruism, still less heroism, except as an aberration. The Durkheim-Fleck program points to a way of return. For better or worse, individuals really do share their thoughts and they do to some extent harmonize their preferences, and they have no other way to make the big decisions except within the scope of institutions they build. (Douglas 1986:128)

Escola de Chicago, segundo Becker (1996)

Published 13/11/2018 Becker Leave a Comment

BECKER, Howard. 1996. Conferência: a Escola de Chicago. *Mana* 2(2):177-88.

AS DUAS HISTÓRIAS "menores" DA SOCIOLOGIA

> [A] história da prática da sociologia, dos métodos de pesquisa e das pesquisas realizadas, porque não se deve tomar como óbvio que as idéias foram as forças motrizes ou a principal realização de qualquer escola sociológica. De um determinado ponto de vista,

que defendo com firmeza, a história da sociologia não é a história da grande teoria, mas a dos grandes trabalhos de pesquisa, dos grandes estudos sobre a sociedade. (Becker 1996:177)

> A [...] história [...] das instituições e organizações, dos locais onde o trabalho sociológico foi realizado, porque nenhuma idéia existe por si mesma, em um vácuo; as idéias só existem porque são levadas adiante por pessoas que trabalham em organizações que perpetuam essas idéias e as mantêm vivas. (Becker 1996:177)

WILLIAM I. THOMAS

> Mesmo que um aluno não saiba mais nada sobre Thomas, ele provavelmente conhece a frase que o tornou famoso: “se um homem define uma situação como real, ela se torna real em suas conseqüências”. Esta foi sua primeira elaboração do conceito de “definição de situação” como elemento crucial para a compreensão da sociedade e da ação social. (Becker 1996:178-9)

ROBERT E. PARK

> Logo em seus primeiros tempos em Chicago, Park escreveu um ensaio sobre a cidade, encarando-a como um laboratório para a investigação da vida social. Ele tinha uma idéia central sobre a história do mundo naquela época, sobre o que estava ocorrendo, idéia que resumiu ao dizer: “hoje, o mundo inteiro ou vive na cidade ou está a caminho da cidade; então, se estudarmos as cidades, poderemos compreender o que se passa no mundo”. Assim, Park organizou seus alunos para esse empreendimento. (Becker 1996:180)

> Park era muito eclético em termos de método. Se achasse que era possível mensurar alguma coisa, ótimo, se não o fosse, ótimo também. (Becker 1996:182)

INTERACIONISMO (ou o que significa “desempenhar” uma estrutura/instituição)

> [M]uitos de nós, alunos de Hughes, Blumer, Warner, [...] [a]chávamos
> que, de alguma maneira, éramos diferentes [dos “outros que tinham ido para Columbia, Michigan ou Harvard”]. [...] A noção de *interação simbólica* pode dar conta do que quero dizer [...]. Uma das idéias certamente predominantes referia-se à oposição a noções como as de *organização social* e *estrutura social*, muito comuns no pensamento dos egressos de Harvard ou Columbia, entre os alunos de Robert Merton, Talcott Parsons, bem como no pensamento de certos antropólogos ingleses, que usavam a metáfora da estrutura social de modo excessivamente reificado. Penso que para nós, ao contrário, uma das idéias mais importantes era a de que a organização social consiste apenas em pessoas que fazem as mesmas coisas juntas, de maneira muito semelhante, durante muito tempo. Ou seja, para nós a unidade básica de estudo era a interação social, pessoas que se reúnem para fazer coisas em comum – exemplificando com um tema antropológico, para constituir uma família, para criar um sistema de parentesco. Disso decorre que um sistema de parentesco é formado pelas ações de pessoas que fazem as coisas que se supõe que parentes devam fazer, e que, enquanto o fizerem, teremos um sistema de parentesco. Quando não o fizerem mais, o sistema de parentesco se torna outra coisa. Portanto, o que nos interessava eram os modos de interação, especialmente as interações repetitivas das pessoas, modos estes que permanecem os mesmos dia após dia, semana após semana. Às vezes, esses modos de agir se alteram substancialmente, devido a uma revolução ou desastre natural, mas, outras vezes, a mudança se dá muito lentamente, à medida que as circunstâncias se modificam. (Becker 1996:186)

PÓS 2a G.M.

> [T]erminada a Segunda Guerra Mundial, a Escola de Chicago, de

> certo modo, deixou Chicago; o próprio Departamento voltou-se, como instituição, para uma perspectiva mais ligada ao *survey* e à pesquisa quantitativa, tornando-se menos aberto a estudos com abordagem antropológica. (Becker 1996:187)

LINHAGEM ANTROPOLÓGICA DE BECKER (autodeclarada)

> Simmel, Park, Hughes, Becker. (Becker 1996:188)

Perspectivismo harawayano (Haraway 1995[1988])

Published 04/10/2018 Haraway Leave a Comment

HARAWAY, Donna. 1988. Situated knowledges: the science question in feminism and the priviledge of partial perspective. *Feminist Studies* 14(3):575-99.

HARAWAY, Donna. 1995. Saberes localizados: a questão da ciência para o feminismo e o privilégio da perspectiva parcial. (Trad. Mariza Corrêa) *Cadernos PAGU* 5:7-41. [1988]

A FAVOR E CONTRA

> este texto é um argumento a favor do conhecimento situado e corporificado e contra várias formas de postulados de conhecimento não localizáveis e, portanto, irresponsáveis. Irresponsável significa incapaz de ser chamado a prestar contas. (Haraway 1995:22)

LATOUR

> Latour não é um teórico feminista notável [LOL], mas pode transformar-se num através de leituras tão perversas como as que ele faz do laboratório, esta enorme máquina de fazer erros significativos mais rapidamente do que qualquer outra, ganhando assim o poder de mudar o mundo. O laboratório é para Latour a indústria estrada de ferro da epistemologia, na qual os fatos só podem mover-se nos trilhos montados a partir do laboratório. Quem controla a estrada de ferro controla o território em volta. Como podemos ter esquecido? Mas atualmente não é da falida estrada de ferro de que precisamos e sim das redes dos satélites. Em nossos dias, os fatos se movem em feixes de luz. (Haraway 1995:9)

DIZER/FAZER MODERNO

> há uma relação muito frouxa entre o que os cientistas acreditam ou dizem acreditar e o que eles realmente fazem. (Haraway 1995:9)

RECUSA DO PÓS-MODERNO

> não podemos nos permitir esses jogos específicos com as palavras – os projetos de criação de conhecimento confiável a respeito do mundo “natural” não podem ser entregues ao gênero paranóico ou cínico da ficção científica. Quem tem interesses políticos não pode permitir que o construcionismo social se desintegre nas emanações radiantes do cinismo. (Haraway 1995:10)

NERVOSISMO COM A METÁFORA BÉLICA

> quanto mais avanço na descrição do programa do construcionismo social radical e de uma versão específica do pós-modernismo, aliada aos ácidos instrumentos do discurso crítico nas ciências humanas, mais nervosa fico. Como todas as neuroses, a minha está enraizada no problema da metáfora [...]. Este mundo-como-código é, apenas para iniciantes, um campo militar de alta tecnologia, uma espécie de campo de batalha acadêmico automatizado, no qual flashes de luz chamados jogadores desintegram-se (que metáfora!) uns aos outros, de modo a permanecer no jogo conhecimento e poder. A tecnociência e a ficção científica desmoronam no sol de sua radiante (ir)realidade – a guerra. (Haraway 1995:12)

> é hora de mudar a metáfora. (Haraway 1995:17)

CRÍTICA AO FEMINISMO PÓS-MODERNO

> Desmascaramos as doutrinas de objetividade porque elas ameaçavam nosso nascente sentimento de subjetividade e atuação histórica coletiva e nossas versões “corporificadas” da verdade, e acabamos por ter mais uma desculpa para não aprendermos nada da Física pós Newton e mais uma razão para parar com a velha prática feminista de auto- ajuda de consertar nossos carros. Afinal, trata-se apenas de textos, vamos devolvê-los aos rapazes. (Haraway 1995:13)

> As feministas têm interesse num projeto de ciência sucessora que ofereça uma explicação mais adequada, mais rica, melhor do mundo, de modo a viver bem nele, e na relação crítica, reflexiva em relação às nossas próprias e às práticas de dominação de outros e nas partes desiguais de privilégio e opressão que todas as posições contêm. Nas categorias filosóficas tradicionais, talvez a questão seja ética e política mais do que epistemológica . (Haraway 1995:15)

PARA ALÉM DO PÓS-MODERNISMO

> Todos os componentes do desejo são paradoxais e perigosos, e sua combinação é tanto contraditória quanto necessária. As feministas não precisam de uma doutrina de objetividade que prometa transcendência, uma estória que perca o rastro de suas mediações justamente quando alguém deva ser reponsabilizado por algo, e poder instrumental ilimitado. [...] Precisamos do poder das teorias críticas modernas sobre como significados e corpos são construídos, não para negar significados e corpos, mas para viver em significados e corpos que tenham a possibilidade de um futuro. (Haraway 1995:16)

VERSUS

> projetos de ciência sucessora versus explicações pós-modernas sobre a diferença (Harding) (Haraway 1995:17)

> construtivismo radical versus empiricismo crítico feminista (Haraway) (Haraway 1995:17)

ALTERNATIVA AO RELATIVISMO

> A alternativa ao relativismo são saberes parciais, localizáveis, críticos, apoiados na possibilidade de redes de conexão, chamadas de solidariedade em política e de conversas compartilhadas em epistemologia. (Haraway 1995:23)

CAPITALISMO CONTEMPORÂNEO *AVANT LA LETTRE*

> Em “Blue champagne”, Varley (*Blue Champagne*. New York, Berkeley. 1986) transpõe o tema para questionar as políticas de intimidade e tecnologia de uma jovem paraplégica cuja prótese, a cigana dourada, permite-lhe completa mobilidade. Mas, uma vez que o aparato, infinitamente caro, pertence a um império inte[r]galáctico de comunicações e de entretenimento, para o qual ela trabalha como uma estrela da mídia, fazendo “contatos”, ela só pode manter seu outro eu tecnológico, íntimo, habilidoso, em troca de sua cumplicidade na mercantilização de toda sua experiência. Quais são seus limites na reinvenção da experiência à venda? O pessoal é político sob o signo da simulação? (Haraway 1995:18)

O PROBLEMA DA OBJETIVIDADE

> Parece-me que as feministas, seletiva e flexivelmente, têm se utilizado, e sido apanhadas, por dois pólos de uma tentadora dicotomia em relação à objetividade. (Haraway 1995:8)

OBJETIVIDADE CIENTÍFICA (*National Geographic*)

> Esses objetos fabulosos chegam até nós simultaneamente como registros indubitáveis do que está lá, simplesmente, e como festejos heróicos da produção tecno-científica. (Haraway 1995:20)

OBJETIVIDADE FEMINISTA

> objetividade feminista significa, simplesmente, saberes localizados. (Haraway 1995:18)

> construir uma doutrina utilizável, mas não inocente, da objetividade (Haraway 1995:20)

> Precisamos aprender em nossos corpos, dotados das cores e da visão estereoscópica dos primatas, como vincular o objetivo aos nossos instrumentos teóricos e políticos de modo a nomear onde estamos e onde não estamos, nas dimensões do espaço mental e físico que mal sabemos como nomear. Assim, de modo não muito perverso, a objetividade revela-se como algo que diz respeito à corporificação específica e particular e não, definitivamente, como algo a respeito da falsa visão que promete transcendência de todos os limites e responsabilidades. A moral é simples: apenas a perspectiva parcial promete visão objetiva. Esta é uma visão objetiva que abre, e não fecha, a questão da responsabilidade pela geração de todas as práticas visuais. [...] A objetividade feminista trata da localização limitada e do conhecimento localizado, não da transcendência e da divisão entre sujeito e objeto. Desse modo podemos nos tornar responsáveis pelo que aprendemos a ver. (Haraway 1995:21)

> Não há nenhuma fotografia não mediada, ou câmera escura passiva, nas explicações científicas de corpos e máquinas: há apenas possibilidades visuais altamente específicas, cada uma com um modo maravilhosamente detalhado, ativo e parcial de organizar mundos. [...] Compreender como esses sistemas visuais funcionam, tecnicamente, socialmente e psiquicamente, deveria ser um modo de corporificar a objetividade feminista. (Haraway 1995:22)

OBJETIVIDADE como CONEXÃO PARCIAL

> O eu cognoscente é parcial em todas suas formas, nunca acabado, completo, dado ou original; é sempre construído e alinhavado de maneira imperfeita e, portanto, capaz de juntar-se a outro, de ver junto sem pretender ser outro. Eis aqui a promessa de objetividade: um conhecedor científico não procura a posição de identidade com o objeto, mas de objetividade, isto é, de conexão parcial. (Haraway 1995:26)

CONHECIMENTO e OBJETIVIDADE

> O conhecimento do ponto de vista do não marcado é realmente fantástico, distorcido e, portanto, irracional. A única posição a partir da qual a objetividade não tem a possibilidade de ser posta em prática e honrada é a do ponto de vista do senhor, do Homem, do deus único, cujo Olho produz, apropria e ordena toda a diferença. Ninguém jamais acusou o deus do monoteísmo de objetividade, apenas de indiferença. O truque de deus é auto-idêntico e nos enganamos ao tomá-lo por criatividade e conhecimento, até por onisciência. (Haraway 1995:27)

PERSPECTIVA DOS SUBJUGADOS

> As perspectivas dos subjugados não são posições “inocentes”. Ao contrário, elas são preferidas porque, em princípio, são as que tem menor probabilidade de permitir a negação do núcleo crítico e interpretativo de todo conhecimento. (Haraway 1995:23)

> Mas como ver desde baixo é um problema que requer, pelo menos, tanta habilidade com corpos e linguagens, com as mediações da visão, quanto têm as mais “altas” visualizações tecno-científicas. (Haraway 1995:23)

PERSPECTIVISMO

> O relativismo e a totalização são, ambos, “truques de deus”, prometendo, igualmente e inteiramente, visão de toda parte e de nenhum lugar, mitos comuns na retórica em torno da Ciência. Mas é

precisamente na política e na epistemologia das perspectivas parciais que está a possibilidade de uma avaliação crítica objetiva, firme e racional. (Haraway 1995:24)

> quero argumentar a favor de uma doutrina e de uma prática da objetividade que privilegie a contestação, a desconstrução, as conexões em rede e a esperança na transformação dos sistemas de conhecimento e nas maneiras de ver. Mas não é qualquer perspectiva parcial que serve; devemos ser hostis aos relativismos e holismos fáceis, feitos de adição e subsunção das partes. [...] Precisamos também buscar a perspectiva daqueles pontos de vista, que nunca podem ser conhecidos de antemão, que prometam alguma coisa extraordinária, isto é, conhecimento potente para a construção de mundos menos organizados por eixos de dominação. (Haraway 1995:24)

EPISTEMOLOGIAS FEMINISTAS

> O eu dividido e contraditório é o que pode interrogar os posicionamentos e ser responsabilizado, o que pode construir e juntar-se à conversas racionais e imaginações fantásticas que mudam a história. Divisão, e não o ser, é a imagem privilegiada das epistemologias feministas do conhecimento científico. “Divisão”, neste contexto, deve ser vista como multiplicidades heterogêneas, simultaneamente necessárias e não passíveis de serem espremidas em fendas isomórficas ou listas cumulativas. (Haraway 1995:26)

GÊNERO E CORPORIFICAÇÃO FEMINISTA

> Gênero é um campo de diferença estruturada e estruturante, no qual as tonalidades de localização extrema, do corpo intimamente pessoal e individualizado, vibram no mesmo campo com as emissões globais de alta tensão. A corporificação feminista, assim, não trata da posição fixa num corpo reificado, fêmeo ou outro, mas sim de nódulos em campos, inflexões em orientações e responsabilidade pela diferença nos campos de significado material – semiótico. Corporificação é prótese significante (Haraway 1995:29)

> a corporificação feminista resiste à fixação e é insaciavelmente curiosa a respeito das redes de posicionamentos diferenciais. Não há um ponto de vista feminista único porque nossos mapas requerem dimensões em demasia para que essa metáfora sirva para fixar nossas visões. Mas a meta de uma epistemologia e de uma política de posições engajadas e responsáveis das teóricas feministas de perspectiva permanece notavelmente potente. A meta são melhores explicações do mundo, isto é, “ciência”. (Haraway 1995:32)

A METÁFORA VISUAL

> A metáfora [visual] nos convida a investigar os variados aparatos da produção visual, incluindo as tecnologias protéticas que fazem a interface com nossos olhos e cérebros biológicos. E aqui encontramos maquinários muito particulares para o processamento de regiões do espectro eletro-magnético em nossas fotografias do mundo. É nos meandros dessas tecnologias de visualização nas quais estamos embutidos que encontraremos metáforas e maneiras de entendimento dos e de intervenção nos padrões de objetificação no mundo, isto é, os padrões de realidade pelos quais devemos ser responsáveis. Nessas metáforas, encontramos modos de apreciar simultaneamente ambos, o aspecto concreto, “real” e o aspecto de semiose e produção no que chamamos conhecimento científico. (Haraway 1995:30)

PROIBIR O TRUQUE DE DEUS

> São propostas a respeito da vida das pessoas; a visão desde um corpo, sempre um corpo complexo, contraditório, estruturante e estruturado, versus a visão de cima, de lugar nenhum, do simplismo. Só o truque de deus é proibido. (Haraway 1995:30)

> o truque de deus de um paradigma Guerra nas Estrelas do conhecimento racional. (Haraway 1995:32)

SEXO/GÊNERO

> Evelyn Keller [...] insiste nas importantes possibilidades abertas pela construção da interseção da distinção entre sexo e gênero, de um lado, e natureza e ciência, de outro. Ela insiste também na necessidade de mantermos algum substrato não discursivo para "sexo" e "natureza" , talvez o que estou chamando de "corpo" e "mundo". (Haraway 1995:35)

POLÍTICA e ÉTICA

> Admita-se ou não, a política e a ética são a base das lutas a respeito de projetos de conhecimento nas ciências exatas, naturais, sociais e humanas. (Haraway 1995:28)

AGÊNCIA DOS OBJETOS E ÉTICA CIENTÍFICA

> Saberes localizados requerem que o objeto do conhecimento seja visto como um ator e agente, não como uma tela, ou um terreno, ou um recurso, e, finalmente, nunca como um escravo do senhor que encerra a dialética apenas na sua agência e em sua autoridade de conhecimento "objetivo". (Haraway 1995:36)

> Um corolário da insistência de que a ética e a política, encoberta ou abertamente oferecem as bases da objetividade nas ciências como um todo heterogêneo, e não apenas nas ciências sociais, é atribuir o estatuto de agente/ator aos "objetos" do mundo. [...] Explicações de um mundo "real", assim, não dependem da lógica da "descoberta", mas de uma relação social de "conversa" carregada de poder. (Haraway 1995:37)

> Talvez o mundo resista a ser reduzido a mero recurso porque é [...] uma figura para o sempre problemático, sempre potente, vínculo entre significado e corpos. A corporificação feminista, as esperanças feministas de parcialidade, objetividade e conhecimentos localizados, estimulam conversas e códigos neste potente nódulo nos campos de corpos e significados possíveis. É aqui que a ciência, a fantasia científica e a ficção científica convergem na questão da objetividade para o feminismo. Talvez nossas esperanças na responsabilidade, na política, no ecofeminismo,estimulem uma revisão do mundo como um trickster codificador com o qual devemos aprender a conversar. (Haraway 1995:41)

CIÊNCIA e UTOPIA

> A ciência foi utópica e visionária desde o início; esta é a razão pela qual "nós" precisamos dela. (Haraway 1995:25)

Introduzindo e concluindo a sociologia do conhecimento de Durkheim

Published 11/08/2018 Durkheim Leave a Comment

Síntese das principais idéias apresentadas por Durkheim na Introdução e na Conclusão de *As formas elementares da vida religiosa*.

Edição utilizada:
DURKHEIM, Émile. 1996. *As formas elementares da vida religiosa*. (Trad. Paulo Neves) São Paulo: Martins Fontes [1912]

[redacted]

O elementar não é uma origem absoluta, apenas relativamente a uma evolução do simples para o complexo. Assim, ss formas elementares da vida religiosa estão para as formas mais evoluídas como:

- o simples está para o complexo
- o primitivo está para o moderno/civilizado
- o uniforme/homogêneo está para o diversificado/heterogêneo

- o inferior está para o superior
- o evidente/nu está para o oculto/vestido
- o fácil de investigar está para o difícil de investigar
- os elementos mais característicos de uma instituição estão para os menos característicos
- o tosco/rudimentar/grosseiro está para o elaborado
- a solidariedade mecânica está para a solidariedade orgânica

A mudança na concepção de evolução biológica causada pela descoberta de seres monocelulares é comparada com a proposição de uma concepção de evolução social a partir da ideia de que as religiões totêmicas australianas são as mais elementares: surpreender o segredo da vida no ser protoplásmico mais simples seria como surpreender o segredo da sociedade na instituição mais simples (p.458)

[redacted]

Uma instituição humana não pode repousar sobre o erro e a mentira, senão encontraria resistências insuperáveis e não duraria. Portanto, uma instituição humana deve ser fundada na natureza das coisas e em necessidades humanas.

[redacted]

Nem necessidade física ou metafísica *a priori* (conceitos simbólicos lógico-racionais acessíveis pelas forças do espírito), nem experiência empírica direta individual (hábitos mutáveis acessíveis comportamentalmente), mas necessidade moral concreta acessível por observação histórica e etnográfica.

- o que há de objetivo na ideia
- símbolos bem fundados (na natureza das coisas)
- artifício que segue de perto a natureza
- obras de arte (nem artificial, nem natural)
- imitação da natureza com perfeição crescente
- conservação do poder específico da razão (transcender o empírico) sem sair do mundo observável
- maneiras de agir (ritos) que surgem em grupos coordenados e que se destinam a suscitar, manter ou refazer estados mentais (crenças) desses grupos

[redacted]

- A ciência se origina da religião e difere dela apenas em grau, não em natureza.
- Ciência e filosofia se originam da religião.
- Quase todas as grandes instituições sociais nasceram da religião (a possível exceção é a economia) (p.462)

[redacted]

- distinção das coisas entre sagradas e profanas
- noção de alma
- noção de espírito
- noção de personalidade mítica
- noção de divindade nacional/internacional
- culto negativo (com práticas ascéticas)
- ritos de oblação
- ritos de comunhão
- ritos imitativos
- ritos comemorativos
- ritos piaculares

[redacted]

As categorias fundamentais do pensamento (logo a ciência) têm origem religiosa. O mesmo acontece com a magia e as técnicas dela derivadas (p.462).

As categorias do entendimento são:

- noções essenciais que dominam toda a nossa vida intelectual
- as propriedades mais universais das coisas
- quadros sólidos que encerram o pensamento
- inseparáveis do funcionamento normal do espírito
- a ossatura da inteligência
- hábeis instrumentos/instituições de pensamento laboriosamente forjados ao longo de séculos
- capital intelectual humano acumulado
- acúmulo de experiência e saber (produto) de uma imensa cooperação de uma multidão ao longo das gerações
- representações coletivas

Exemplos de categorias elementares do entendimento:

- tempo
- espaço
- gênero
- número
- causa
- força
- substância
- personalidade
- eficácia
- etc.

O **tempo** como categoria do entendimento (tempo social) é:

- um quadro abstrado e impessoal no qual todos os acontecimentos possíveis podem ser situados
- pontos de referência fixos e determinados indispensáveis em relação aos quais todas as coisas se classificam temporalmente
- o tempo objetivamente pensado por todos
- o calendário (dias, semanas, meses, anos etc.) que exprime e assegura a regularidade do ritmo da atividade coletiva (ritos, festas, cerimônias...)

O **espaço** como categoria do entendimento (espaço social) é composto por distinções (direita/esquerda, em cima/embaixo, norte/sul, leste/oeste) provenientes da atribuição de valores afetivos coletivos (comuns) diferentes a diferentes regiões do espaço, de forma que a forma/divisão/organização social seja o modelo da forma/divisão/organização espacial e esta seja o decalque daquela.

Exemplos de categorias NÃO fundamentais do entendimento (não são encontradas nas religiões elementares):

- contradição
- identidade

[redacted]

A **ação** do ser social ultrapassa a do indivíduo pois não se reduz à utilidade. O **pensamento** do ser social ultrapassa o do indivíduo pois não se reduz à sua experiência direta. O ser social ultrapassa o indivíduo para o bem (fortalece indivíduos normais) e para o mal (pune indivíduos desviantes).

O ser individual está para o ser social como:

- a parte esta para o todo
- o simples está para o complexo

[redacted]

Para cada efeito sua causa (sempre uma única causa para cada efeito). Se a sociologia explica as formas elementares da vida religiosa, então também explicará as formas mais evoluídas (p.458)

[redacted]

- A sociedade é a causa objetiva, universal e eterna da experiência religiosa (p.461).

- A sociedade é a fonte da ação religiosa (p.462)
- O que foi feito em nome da religião não foi feito em vão (p.463).
- A sociedade ideal supõe a religião, não a explica (p.464).
- A religião é a imagem da sociedade e reflete todos os seus aspectos (p.464)

[redacted]

- a sociedade só pode fazer sentir sua influência se for um ato, e só será um ato se os indivíduos que a compõem se reunirem e agirem em comum. É pela ação comum que a sociedade toma consciência de si e se afirma; ela é, acima de tudo, uma cooperação ativa.
- As ideias e os sentimentos coletivos só são possíveis graças a movimentos exteriores que os simbolizam (p.461-2)
- Sociedade é ação (p.462)

[redacted]

- O conjunto de atos regularmente repetidos que constitui o culto é a repetição de atos com o objetivo de renovar os seus efeitos, o conjunto dos meios pelos quais eles se criam e se recriam periodicamente (p.460)
- O sentimento de alegria, paz interior, serenidade, entusiasmo do fiel não pode ser puramente ilusório (p.460)
- Sentimentos coletivos só podem tomar consciência de si ao se fixarem em objetos exteriores na forma de sentimentos objetivados. Sentimentos coletivos ganham assim uma existência objetiva e podem ser confundidos com o mundo objetivo, sendo na verdade uma instituição social (p.462).
- As manobras materiais da mecânica mística e da técnica religiosa não passam do invólucro externo sob o qual se dissimulam operações mentais, visando atingir, tonificar e disciplinar consciências (p.463).

[redacted]

- A verdadeira função da religião não é nos fazer pensar, mas sim nos fazer agir, nos ajudar a viver. O fiel que se pôs em contato com seu deus não é apenas um homem que percebe verdades novas que o descrente ignora, é um homem que pode mais (p.459)
- Forças religiosas são forças humanas/morais.
- Mesmo as forças mais impessoais e anônimas não passam de sentimentos coletivos objetivados (p.462)