The Giant on my Shoulders - Confessions of a Dwarf.

An account of the volatility of truth and the power of semantic agency, narrativity, and the metaphors that live us.

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Abstract

Based on Michel Foucault's distinction between two types of *discourse analysis* – the *analysis a discourse of* and *discursive analysis* - the article discusses an analytical model of truth and knowledge production, designed for genealogical use in both empirical and archival sciences. The model is exemplified on the situation of doctor-patient interaction towards diagnostic and therapeutic decision-making. Since diagnostic and therapeutic discourses, in particular with regard to "experimental medicine and medical theory", used to be part of natural philosophy in the 18th and 19th century in the form of dietetics, psychosomatic medicine, and medical semiotics, proto-semiotics and proto-pragamtism used to be part of this discourse. Subsequently, pragmatic and semiotic social sciences can evoke this conceptual legacy. In briefly contrasting the genealogical model with suggestions by Norbert Wiley and Margaret Archer, that the model combined with a deeper understanding of the history of ideas, and a combination of archival and empirical attitude in research are an effective tool for future sociologists of knowledge and medicine.

,In the case of humans,
the solution would be to embed the newcomer in the host's language as the 'house of being'."
Peter Sloterdijk. *Atmospheric Politics.*

"It may be, we are too dedicated to commentary to understand what lives are."
Michel Foucault. *Ils ont dit de Malraux*

I. Introduction.

Georges Canguilhem is credited with introducing the idea that "concepts are not innocent". Moreover, concepts are dangerous, risky, and precarious; this qualifies them as meaningful. The same is true for practices. Practices and concepts are meaningful to us who we are human actors and interlocutors. Practice and concepts are meaningful insofar as they relate to one another, connect one another. The relations and connections are vital elements in the constitution of selves and the enactment of corporeality in the form of *embodied practices.*   For a practice or a concept to have meaning means that it has an effect that will, however transformative in itself, preserve the momentum and be succeeded by practices and concepts related to the prior ones. This triple effect of meaning – preservation, transformation, and continuation – is what we will call *semantic agency*.

We all use semantics everyday, or are being used by semantics as their carriers and locutors. As sociologists, anthropologists, or historians, we do not only deal with semantics, we deal in semantics. Signs, symbols, metaphors, and the narrative structures that provide the context for their *enactment* – often, but not always in linguistic form - are a vital and key aspect for they pertain structuring and creative power to shape both actions and our selves.

As pragmatic and semiotic social scientist, we study knowledge that has sedimented in semantics, we ask for the conditions that have made semantics possible and those that regulate the mechanisms of dissemination, and finally, we ask for the conditions that make concepts, practices, or semantics "true".

Meaningful actions, I argue, *enable* truths. The effects of semantics are true because the practices and selections are enacted in real situations. Decisions that actors derive on the basis of the semantics that come to play have real effects. To create an analytical model that allows to describe and account for semantic agency in decision-making in both contexts of empirical and archival research designs, I have followed a key distinction that is implicitly present in the works of Michel Foucault:

Whereas discourse analysis looks at a series of enunciations and by revealing their rules of transformation, a discourse is revealed. Where discursive analysis looks at one utterance, its conceptual history (heritage) and local situatedness inside a discourse is revealed[1].

When speaking about a larger study such as, for example, *Discipline and Punish* in its entirety, it is not always easy to see that Foucault kept these two dimensions of his analysis implicitly apart. And for the necessary reduction of complexity in scholarly discussion, a certain kind of eclecticism is called for that requires us to gloss over such delicate distinctions. However, when we deal with the details, the distinction makes sense, when we assume that while speaking about punishment or the discourse

of the justice system, Foucault was engaging the topic in the mode of discourse analysis, and when speaking about the Panopticon, he was speaking in the mode of discursive analysis. Perhaps it is best to speak of these two modes of analysis as Foucault's two moods or temperaments that were in constant interchange. However, if we want to understand how regimes of knowledge production work, this distinction is helpful in trying to understand what roles situatedness and longterm stability play. For any kind of "truth" that people have the will to believe in and act upon, will be constituted within a field that is constituted by a discourse and its discursive objects (practices, metaphors, symbols, signs, and expressions). With this insight in mind, and we can turn to our way of producing an anthropology of the present.

To do so, we might better revamp Bernard de Chartres's famous proverb, that was traded from John of Salisbury to Isaac Newton to Robert Merton:

We are but dwarfs on whose shoulders giants sit, giants with wings called meanings, practices, semantics; they are waiting for the climate to change just right so they can spread their wings and be carried by the wind to take action, to take flight.

II. A model to account for creative misunderstandings known as truth and knowledge

In 1972, Michel Foucault introduced an implicit distinction: Accrdongly, the objects of my heuristic-descriptive model are either discursive objects or discourses, depending on whether the question that is approached by an investigator is an effort to describe situations of decisions-making (microclimates of truth) or social/cultural transformations (epistemological ruptures): The type of *analysis of discourse* investigates a series of enunciations and the embedded rules of transformation, and, subsequently, a discourse is revealed. *Discursive analysis,* on the other hand, is a mode of investigation for single utterances, their conceptual histories (heritage) and local situatedness inside a discourse.

The analytical consequences I am about to delineate, most importantly the idea that decision-making and knowledge production are closely linked, are in line with recent sociology of knowledge (Latour 2004, 2006, Rabinow 1996, 2003, Knorr Cetina 1999, 2007,2009, Collins 2001, Esposito 2004, Lakoff A., 2000, Rheinberger 2006, Muslow/Stamm 2004) and with the theory of organization (Luhmann 2000, 2009[1973], Langer 1989, Weick/Sutcliffe 2007, Weick, 1995, 2000, 2009, Czarniawska-Joerges 2000, Strati/Nicolini 2000, DuBrin 2008). Foucault, Luhmann, Latour, Rheinberger and Knorr Cetina are one step short of a proto-theory of an account for semantic agency. What is missing in this mostly French-German engine for the analysis of knowledge is a bit of Anglo-American scholarship and a bit of Pragmatism, perhaps. With the addition of John Pocock (1985, 1987, 1989), Mark Bevir(1996, 1997, 1999), Margaret Archer (2003), Norbert Wiley (1994), and the classics William James and Charles Sanders Peirce, we will arrive at an effective model; given we account for the concept of language being substituted with the concept of "semantics within epistemic cultures"[2].

Wiley and Archer, following in the footsteps of American Pragmatism, include the dimension of the constitution of self in the process of symbolic mediated. For them, as for Bevir, Pocock and the Cambridge School, semiotic or symbolic communication is equated with language.

Bevir, phrases this most directly in the beginning of his seminal *Logic of the History of Ideas*:

"[T]o identify the logic of any discipline one has to uncover the forms of reasoning appropriate to it by means of a study of the grammar of the concepts operating it." (1999: 2)

I also must assume that Wiley and Archer both hold similar attitudes. However, in my view "forms of reasoning" and "operational grammar" are both distinctly irreducible aspects of the assembly of truth, decision-making, and, therefore, semantic agency. Moreover, the aspect of "dialog" that is featured in Wiley's, Archer's, and Bevir's (et al) works seems, of course, distinctly logos-biased and shunning the somatic and psychosomatic dimension of interaction.[3]

However, Wiley, in his seminal *The semiotic self* (1994), was the first who properly accounted for the temporal dimensions of the constitution and enactment of the "autonomous" self through a unique synthesis of Pragmatism's leading voices. The constitution of the self is based on the three temporal aspects of the "internal dialogue" between a present self ("I") that talks to the future self ("you") about the past self ("me"). Margaret Archer has included the "internal conversation" in her realist solution

of the structure-agency problem[4], by including the idea that internal conversation leads to *personal emergent properties* via *structural emergent properties*. Thereby, she hopes to save autonomy and choice through reflexivity in language.

While her concept is more sociological than Wiley's – though not as sociological as for example Pollilo's (2004) – her problems with the temporal dimensions that also plague Wiley are evident, and she needs to introduce an "involuntary placement of actors" that has its foundation in the "temporal priority" of culture and structure to the generation of actors.

As for a kind of semantic agency that allows for the inclusion of linguistic and non-linguistic forms of semantic agency, the model described in the following passages accounts for the temporal problems along the axis of diachronicity and synchronicity[5], in a way that need not assume "temporal priority" of any "type of self" but can assume a kind of *temporal complementarity* by accounting, instead, for factors that make an action/decision/truth more likely or less likely to occur.

Indeed, Pollilo rightly asserts (2004:3) that Wiley

"provides the most useful entry point to this kind of analysis, in that it elegantly accounts for the social processes that allow for the self to operate",

However, not only does Pollilo argue that the sociality of these processes in their relation to the self must be accounted for in social terms; "operationability" here means, mostly, rationalization of actions[6]. When tied to organization theory, we find that the tradition of symbolist organization theory and the theory of epistemic cultures (Czarniawska-Joerges 2000, Knorr Cetina 1999) have come to factor these aspects within their considerations. What these considerations do allow for is, in line with cognitive organization theory, the creation of "causal maps"[7]. These maps, however, are not maps of fixed social systems, but of a volatile equilibrium just as on a dynamic map of local weather patterns and meteorological events that allows for the creation of an idea of what localized micro-climates must look like in a given region in the form of a mini-theory.

I propose for the reconstruction of the production of knowledge a model that distinguishes between two dimensions: *productive/enabling* and *constraining/disabling* elements (Stingl, forthcoming): In this account any interlocutor or actor is *enabled* by his *equipment* (Rabinow 2003) to execute a specific practice or utter/write a particular statement or enunciation. On the other side, interlocutors are *constrained* in the kinds of actions, practices, and statements that can be executed. The "agents" of constituting and enforcing these constraints are members[8] of a network, bureaucracies, or conventionalizations (Bloor 1997) in informal institutions. A national or regional scientific or medical community is a fair example of such a constraining force.

The dimension of *constraints* (or the *negative selection regime*) I call, tentatively, the *arrangement*.

If we try to further the analytical depth of this model, we could say that such *arrangements* consist, on the one hand, of formal institutions, organizations, and bureaucracies. These entities have their own histories, substrates (including paper work, buildings, offices, etc.), and rules (or grammar) which are often explicitly written in such things as manuals, guidebooks, documented legislature, etc. These

entities should be understood to be *collective actors*. They can function, from an analytical point of view, as units that are capable to be acting agents themselves (see Oberschall 1992).

The US *Department of Health* would be a good example for such a collective actor, distinguished from, say, an actual case worker Jones. On the other hand, we should also include another analytical dimension of *arrangements*, that we best call *constellations* (Henrich 1991).

Networks of people and the informal institutions that spring from their interaction rituals (see Collins 2003) are the kind of *constellations* that Dieter Henrich (1991) has described in his research of the first Post-Kantians at the Tuebinger Stift, like Hegel, Schelling[9], Hoelderlin. Aside from the people that constitute a *constellation*, they have no real world substrate. What they have, however, is a kind of grammar of their own, rules that cannot be found in an explicit form which negotiate the forms of interactions that are possible. David Bloor's concept *conventionalization* is very similar to this kind of "implicit grammar". *Constellations* are, therefore and at the same time, a *collectivity of actors* (see Parsons 1951): Each collectivity depends on the individual actions or acts of selections that constitute it. In science, a "school" or an "invisible college" would be a very typical example for what a *constellation* would look like.

The difference between *collective actors* and *collectivities* is of utmost analytical importance: *Collective Actors* can are considered to be part of the *external dimension* in our analytical scheme, while *collectivities* are part of the *internal dimension*, because in the situation that is analyzed there will be an actual representation of the *collectivity* by a person who is actually and internally involved in the collectivity[10]:

In other words, if the "grammar" that is described in the form of the internal dimension is to be applied, an actual person who has internalized this "grammar" must be present. This situation is different for any external entity. For example, a practicing doctor is part of a collectivity, such as a group of colleagues at Mass. General Hospital's Children's ward and this group of doctors established among themselves that they do not prescribe stimulants to children diagnosed with ADHD. The same doctor is not a "member" of the collective actor Department of Health (DoH), however, he still would have to adhere to any revision of the ethical guidelines that the DoH publishes in written form in a book or online source.

The difference will be exemplified in the difference of sanction that the doctor will experience if s/he chooses to disregard the grammar (Foucault 1966a,b). The sanctions of the violations of rules provided by a collective actor are given explicitly and beforehand. S/he knows what they will be. The sanctions within the collectivity are, on the other hand, vague and time sensitive. They might be lifted or enforced at any time without warning, they can take different shapes, or simply dissipate. *Arrangements* are subsequently the dimension where it will be decided what action, practice, or enunciation is not permissible, and what the consequences for a violation will be. Therefore, any "creative" act will, consequently, present a violation. Whether it can become an accepted practice at some point will depend on the sanctions that it will meet, which will be the result of an interplay between the internal and external sides of the arrangement. For example, a doctor may decide on an

off-label use of a medication. If he is caught, the sanctions might be clearly laid out from the collective actor's (DoH) side but enforcement rests with the collectivity (colleagues). If his/her peers refrain from executing the sanction, the off-label use may continue. Over time, it might prove a useful medication and become a standard treatment, accepted by the DoH and the *Food and Drug Adminsitration* (FDA) However, the situation could also be the other way round and a minor violation of official regulations might be a reason to start a mobbing campaign against a colleague. From an analytical point of view, the production of selective actions within arrangements can be reconstructed very effectively with this model.

What happens on the creative side of things; the *productive* or *enabling factors* that comprise *assemblages*. We can utilize Paul Rabinow's Foucault- based terminology of *assemblages* and *equipment*. For the specific problems addressed here, it must, however, be extended. The diagnsotic category of *Attention Deficit/Hyperactivity* Disorder (ADHD) makes an excellent example of an *assemblage*. It was and still is part and parcel of a myriad of scientific and public discourses. For two centuries of conceptual history, "attention and its pathologies" have established a determinative and productive power over the life-course of children and, increasingly, adults.

In our heuristic fashion, we can identify four components that form an *assemblage* along two ideal-typical dichotomies that represent them. The distinction between the *intellectual climate* and the *equipment* on the one hand, and on the other we have a temporal dimension distinguishing between synchronic and diachronic elements:

The *intellectual climate* circumscribes the field of the possible conceptual *relations* or potentialities that an interlocutor can possibly make. *Relations* include analogies, metaphors, equivocations, comparisons, creative misunderstandings, &c.. The history of scientific progress is, in my account, a history of creative misunderstandings and equivocations. The intellectual climate's diachronic aspect is understood as a *thought-scape* or *Denkraum* (Dieter Henrich 2004). A *thought-scape* represents a field or sphere of cognitively possible problems or *problematizations* (Foucault). *Problematization* describes a historical and social situation that constructs potential outcomes of truth-and-false selections in a web of possible solutions. This *problematization* is described as a "historical space of conditioned contingency" (Rabinow 2003). In the progress of discourses throughout history, a chain of discoveries may lead to new problems. These problems generally remain largely implicit and cannot be made explicit at first. They keep summing up and remain implicitly present but unresolved until they are concretized and rendered explicit (and largely public) by a string of publications or public enunciations that thereby open a new *thought-scape*. Kantianism,for example, at the beginning of the nineteenth century represents the opening of such a new *thought-scape*.

A current and actual situation, on the other hand, *enables* conceptual relations in a synchronic aspect. These aspects are, analytically, *dispositions* and they are *the* actually present aspects or problems discussed in a contemporary intellectual climate. The discussion of reliability over validity in studies

of the effect of pharmaceuticals in ADHD treatment would represent such a *disposition*. With the concept of *disposition*, we can create an account for the emergence of the prevalence of evidence-based medicine[11] and for the fact that the research for therapeutic regimes for ADHD is subject of the processes of medicalization and pharmacologicalization.

Equipment, on the internal side of things, accounts for the conceptual tools that are available to interlocutor. *Equipment* is distinguished into *theoretical/epistemological vernaculars* (synchronic) and *conceptual frames of reference* (diachronic). This distinction is in accordance with the idea of temporality on two levels: Diachronic and synchronic. The diachronic conceptual frames of reference provide a stable fundament, while *vernaculars* are dynamic while not arbitrary structures. A Kantian frame of reference is a good example: An interlocutor might be operating within a Kantian frame of reference when using either a physicalist-reductionist type of *vernacular* or the *biological vernacular:* there a common elements and concepts such as the idea of "apriorism", "historicity", or the "categorical approach". These common elements are but one aspect, the other is the actual enunciation in the statements by an interlocutor. The interlocutor employs these forms in his enunciations in an *epistemological vernacular*. *Vernaculars* have dynamic histories and often "compete" for dominance within *constellations* – since the *constraining* and *enabling* levels are not independent of each other in concrete historic reality. With Kant and the birth of biology as a scientific *discipline*, for example, the *biological vernacular* shaped much of nineteenth century science. In the late nineteenth century the *vernacular* of physicalist reductionism emerged and gradually began to dominate even the life and social sciences of the twentieth century.

On the heuristic and analytical level, the elements that I have described in the past few passages constitute *assemblages*. ADHD is an excellent example, for the conceptual history and current practices that constitute and are constituted ADHD as an *assemblage* represent more than „just a disorder". *Attention and its pathologies* have become a crucial focal point of the human condition, thus, how we think of ourselves and find our place in society. The ADHD discourse conflates historical development and current conceptual crises (A.Lakoff 2000); thereby Attention and Attention Deficit is at the same time one of the „metaphors we live by" (G.Lakoff/Johnson 1980, Schachter 1999) and also so much more: *Constraining* factors are analogous to grammar or syntax and determine what is not permissible in a discourse, while *productive/enabling* factors are analogous to semantics and pre-structure what may be possible in discourse. The likelihood of an enunciation can be "equated" soliciting both factors. Progress usually occurs within a pre-existing thoughtscape and frame of reference. There are very few spaces in between that allow for degrees of freedom, where enunciations can be conceived that elude either. These occasions are historically rare, if they occur at all, and they demaracte the blurring of the line between madness or real ingenuity. According to my model, *so-called* geniuses have certainly committed to progress; they are not, however, *real* geniuses who have created something out of nothing. The romantic ideal of a genius describes a person who has done or said something that nobody even thought of before. Such a person would not be taken

seriously, for s/he would not be able to enunciate whatever s/he discovered in a way that would be intelligible in either the grammar or the semantics of his/her contemporary discourses. New knowledge can only be created by expanding the existing semantics, by creating new *assemblages* from within the existing *equipment* and *intellectual climate* and hoping for the possibility to introduce this new knowledge via an *arrangement* that does not constrain this new knowledge on the basis of its conceptual heritage.

What is missing from the graphic representation of the model is a type of settlements in boundary negotiations between groups of actors that allow for a continuous yet temporary regimen of action guiding regulations – therefore, we want to speak of *regimen* not *regime*. This type of regimen that is explicitly negotiated and the consensus „institutionalized" into a more or less formalized set of rules for boundary exchanges (more formalized examples are contracts), which cover the normative – though not the conceptual – aspect of what Saskia Sassen also occassionally denotes as *assemblies*. However, because these are not „set in stone" but have only a half-life, which is predetermined in some and uncertain in other cases, we will, for future use and only with the regard to praxeology, speak of these as *usances*.

Usance is actually a French technical term from the realm of trade, but for its resemblance with *use* or *usage*, it seems an attractive term, because it points metaphorically to the fact that *usances* entail a very active dimension on the side of individual actors who must „use" or „put to use" these *usances*, and show or indicate a willingness to enforce through active positive/negative sanctioning.

The etymology and lexical definitions of *usance* bear some interesting aspects that will prove the concept to be an analytical sharp and producitve tool in the empirical work I plan to undertake with this model of knowledge production.

English Vocabulary Websites, based on commercial dictionaries offer a variety of definitions. The *general and historic* meaning of **usance**, as pertains to our model, is best defined as

„a trade custom or regulated exchange relation that exists between merchants and traders within a bounded space and location of clearly defined legal rules, laws, and legitimation principles and/or within a specific realm or sphere of expertise or trade".

Finally, the actual analytical subject of this model is the process of *assembly*.

In each situation that we come to analyze as ethnographers, sociologists, historians, or anthropologists we find that *assemblages* and *arrangements* come together and constantly (re)produce through creative potentials and selective constraints the *assembly* of a concrete entity. However, this entity or *assembly* requires two more analytical units or better yet points-of-view: the *network*$_{ANT}$ and the *actor*$_{ANT}$.

These are, as indicated by the indexicals, different from the actors and networks of the *arrangement*. Further, my model is explicitly designed to account for Actor-Network-Theory (ANT): I agree that at large, we should try to leave the *social* and *society* as explanatory categories behind, however, only as far as possible. Latour's (2006) general criticism, which I share, is that sociology has traditionally

relied <u>solely</u> on the *social* as its reference point and explanatory device. He argues that this has resulted in severe limitations for explanatory power[12]. Here, the *actor$_{ANT}$* and the *network$_{ANT}$* are reference points for the analysis of *assemblies*. This opening-concept of *assembly* can refer to different entities. For example, an *assembly* can be a global assembly in politics (Sassen 2008) – say, a global pharmacological initiative; or the assembly can be an actual child, Jones, who is diagnosed with ADHD. It can also be the dopamine system in a physico-chemical system otherwise known as the brain of Mary and currently manipulated and analyzed under an fMRI *regime* by a Doctor Greenslit and Doctor Ratey at Boston MGH. The *actor$_{ANT}$* in either case can be Mary or Jones but it could likewise be the fMRI machine, the bench Mary is lying on while being analyzed or a specimen of a complex molecule that researchers call dopamine. The *network$_{ANT}$* is very similar in presenting the other actors around that play a part in the actual moment of assembly. Environmental aspects have a substantial effect on and in the process of *assembly*. *Assembly* therefore happens all the time and all entities that are part of it have a history (most of which is hidden from us in *black boxes*) and it never leaves the entities unchanged. If read from a metaphysics point of view this would mean that each and everything when seen as the point of view of the *actor$_{ANT}$* is constantly re-assembled within the constraints of a contingent but not arbitrary sphere of possibilities. When we apply this model, whether upon entering an archive as historians, engaging in ethnographic observation, or intervening as consultants, the analytical clarity this model provides can help us figure out why certain problems or conflicts have emerged. In reconstructive research, the first incision that we must make is to make explicit whether our type of analysis in accordance with this model is supposed to be discourse or discursive analysis. This "incision" into the reality we study determines what kinds of properties the *actor$_{ANT}$* and the *network$_{ANT}$* are subject to.

External

Intellectual Climate

Dispositions   Thoughtscapes

Assemblage

Theoretical
Vernacular(s)
Conceptual
Frames of
Reference

Equipment

Synchron   **Diachron**

Network$_{ANT}$

Assembly

enabling

constraining

Actor$_{ANT}$
(human/
non-human)

CollectiveActors

Bureaucracy   Organzation

FormalInstitution

Arrangement

Constellation

Network
of People
Informal
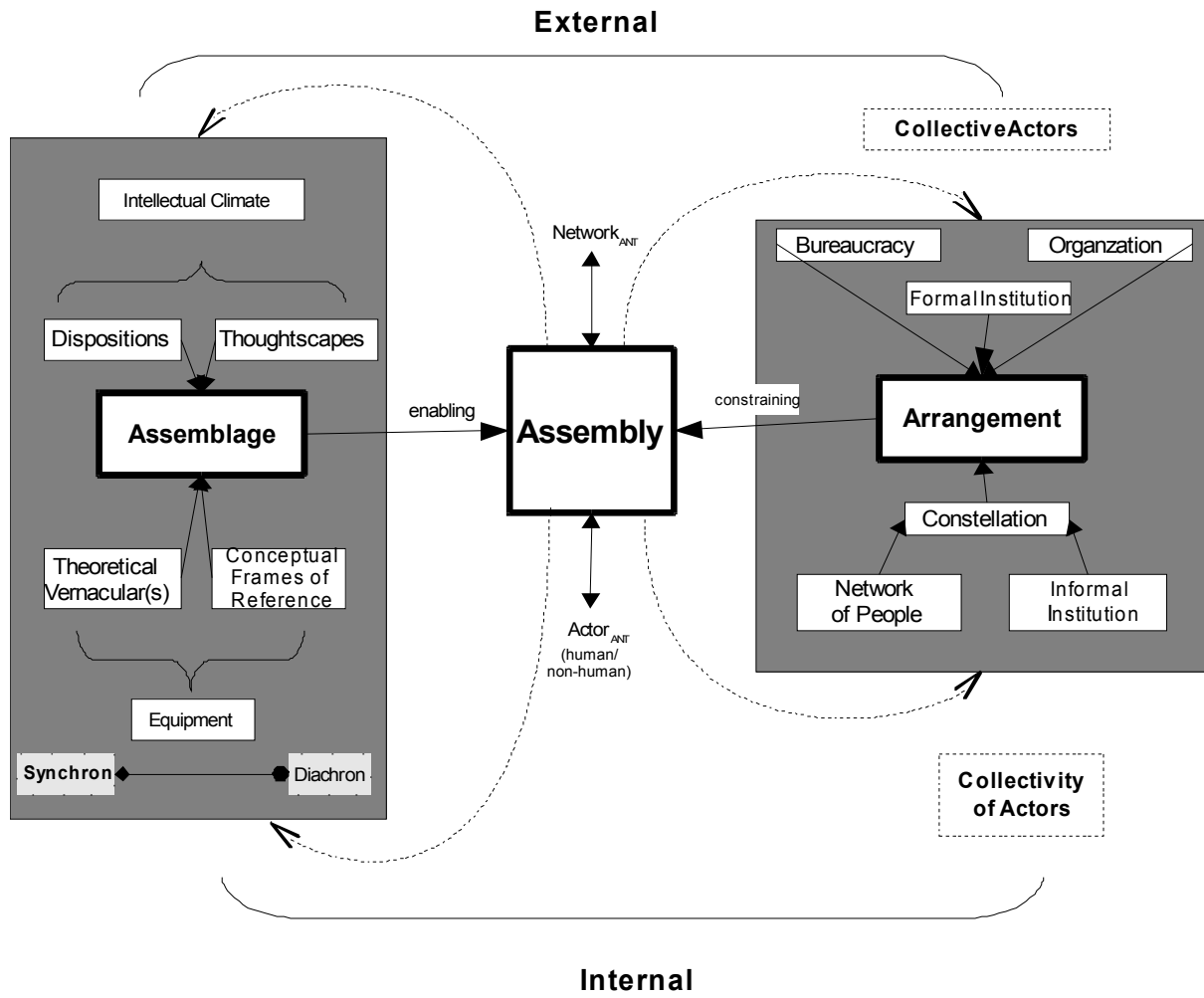Institution

**Collectivity
of Actors**

Internal

Diagram: Theoretical Model of a Truth Regime

III. Experimentalism, Playfulness, and the Diagnostic-Therapeutic Assemblage ADHD.

The culture or attitude of *experimentalism* should be *playful* and *mindful*, and its fundamental property should be curiosity. In professional science, of course, a minimum of "systemacity" or "strictness" must be observed in order to create a standard that allows for criteria such as pragmatic communicability, validity, and, eventually, reliability[13]. Systemacity (Kant) of scientific research creates, therefore, experimental systems - the physical, technical and procedural basis for an experiment or series of experiments. Hans-Jörg Rheinberger, who has provided conceptual tools for the study of experimental systems, understands these to be those activities that utilize a combination of local, technical, instrumental, institutional, social, and epistemic aspects. Some scientists from within "micro-biology" have promoted in popular discourses the idea that there are, indeed, successful experimental systems, such as "model organisms" or this or that scientific apparatus. What the criterion of success is supposed to be, however, is not always as clear and explicit as it should be made. More often than not, this "success" is a form of reliability within a limited scope. If one considers the number of variables that are being controlled in a drug trial or the interpretation scheme behind technical image interpretation (Dumit 2004, Beaulieu 2002), one must realize that there are "truths" being created as a microclimate through the experimental system as part of a knowledge regime. A scientist's or doctor's long-term success that allows him/her to occupy a successful position within an institution or a network, where s/he can function as an agent of selection, or rather a constraining factor, more often than not depends on choosing experimental systems that are considered "appropriate" by the conventions of the institutions s/he is part of. While "reliability" is one of these criteria, reality is very messy and the application of the experimental system can take on a sort of aleatoric momentum that takes research in unpredicted directions for the experimental system is not similarly productive in every context or situation - „productive" being the key word here. The experimental system is productive in producing some result, whether it does compute within the conventionalizations of the concrete arrangement of institutions and networks is another question. Again: What I have called *arrangement*, a configuration of individuals, networks, institutions, bureaucracies, &c., contains a kind of "grammar" of its own. This is very different from the "styles of reasoning", "theoretical /conceptual reference frames", "intellectual climates", or "epistemological vernaculars" that "generate" *assemblages* that can be used to "produce" results that are intelligible. As *result,* I conceive of a form of semantic. this is why I agency in my model can only mean semantic agency. Semantics of this kind are understood to be any

kind of meaningful practices (whether lexic, deictic, or entirely non-lingusitic)[14] that allow to connect actions and practices between actors. *Assemblages* are the creative side of production, for they create semantics that "make sense" within the realm of intelligibility. *Arrangements* produce *constraints*, insofar as they do not care about intelligibility but procedural continuity. In between actors, realities are continually re-assembled. Therefore, the individual human beings caught in these situations of decision-making will have to continually "negotiate" within these arrangements and assemblages, which shape their practices. The execution that follows in succession does, subsequently, produce a volatile truth, a microclimate. If we think, for example, of a child – Mary – entering a clinical program with the diagnosis of ADHD. What will, eventually, be assembled in the process of decision making is the therapeutic regime, such as a drug regimen, that the child will be put under. The reassembling that will happen is nothing short of a reassembling of the neurochemical balance of the brain by inserting a metylphendiate into the dopamine/serotonin system. If we consider the assemblage ADHD as a label that was applied here, we have to think of all the aspects that had to flow into the creation of the assemblage ADHD during a discourse. Moreover, unto the moment of assembling the drug regime our exemplary child Mary will have to undergo, different vernaculars, reference frames had to clash between scientists who produced the assemblage, journalists and politicians who introduced it into the public health discourse, where doctors, nurses, teachers, concerned parents, or Mary's class-mates heard it. In the clinic, different constraints (negative selections) applied, regarding the training program of the nurses and doctors, health care bureaucracies, health care insurance budgets, etc. that select treatment and care options. Eventually, a decision was made and with regard to assemblages and arrangements, a therapeutic regime has taken effect in reassembling the child. Yet, imagine at this very moment, the diagnosis of ADHD and the therapy with a Ritalin regimen *is a truth*; a truth that is decided and acted upon. Metylphenidate will have the effect it has on neurochemical systems also in the case of Mary. Now, let us think for a moment that something has happened, which happens frequently, that ADHD was misdiagnosed and Mary is actually suffering from bipolar disease. That does not take away *the truth assembled* when the diagnosis was made. The practices that were applied were applied because at the moment of diagnosis, this decision on a diagnosis was a truth for all actors concerned in the negotiation process that ended in assambling a truth with real consequences: ADHD was treated with Metylphendiate which had the effect that methylphenidate has. A situation was changed because of a truth-in-actu. That is why truths are microclimates. Mary could have had a different teacher at school who would have told her parents to try an Aikido course first,

her parents could have had a different health insurance and gone to a clinic where doctors prefer cognitive behavior therapy (CBT), the parents could have had differentide as of what Mary's life *should* be like, she could have had a different doctor who has subscribed to different medical journals and prescribed a different drug, simply, he could have been trained to „read the signs of illness" differently. The truth of the assembly, the therapy regime, would have been very different. Just as the later discovery that Mary is suffering from bipolar will produce another microclimate and lead to a different therapy regime. However, what has happened cannot be changed, and the practices applied from the assembly were applied for the actors involved acted on what they assembled to be a truth. Thus, the methylphendiate already affected changes in neuro-chemistry of the psycho-somatic system known as Mary which in turn had effects on her behavior that may have affected how peers and teachers react to her. It is this kind of truth that is translated into practices, respectively, into actions with consequences. And in retrospect, we can describe these actions and reconstruct the "truth" that was at play. Again: this truth is volatile and fleeting, thus it is a microclimate. And to find an adequate description of all the factors involved within the arrangements and assemblages that from the assembly requires the formulation of a mini-theory (Mieke Bal) to describe the assembly. The dyadic doctor-patient situation (or, more complex, the triadic doctor-parent-child) of making a diagnosis and prescribing/accepting a therapeutic regimen represents just such an instance of assembly. Not to mention that two „(semiotic) selves", the doctor's and the patient's, are involved every step of the way and theya re subject to change in the process.

IV.

Biomedicine is comprised of such microclimates: It is a systematized regime of knowledge production, a successful experimental system from the point of view of the institutional grammar of a complex administration must have criteria such as stability or must be able to be reproduced or replicated, for scientists and administrators have to make sense of the system's behavior. Ideally, these systems should be variable and unpredictable enough so that the experimental system may produce useful results[15]. To be useful from the side of the arrangement it needs to be as predictable as possible, from the point of view of enabling new connections from within the vernaculars and reference frames it must be very unpredictable. In a society ruled by a process of *virtualization*, it can be easily seen why scientific progress is severely constrained. *Virtualization*[16] is comprised of two different sub-processes *hyper-*

universalization and *hyper-specialization*. *Hyper-specialization* does occur on the side of arrangements and leads to increasingly complex arrangements and "grammar" that need to be navigated, making it less easy to navigate between them. For an individual human actor, an increased amount of knowledge about "conventionalization" is necessary to operate within these arrangements. Therefore, on the side of assemblages, a trend towards hyperuniversalization[17] will arise to buffer the complexity on the side of the arrangements. People may speak an ever increasing number of intranslatable theoretical vernaculars in their sub-fields. At the same time, the process of creating assemblages that function to assemble a truth regime when the arrangements are ever more complex will lead to processes that create assemblages that are ever more universal. Between doctors, parents, politicians, teacher, health care, bureuacrats, a universal category such as ADHD is actually desirable and the idea of the "magic bullet" of the "medicalization" and "pharmacologicalization" of behavior produces a solution that can be processed even within the most complicated arrangements. It does not matter, whether within the research community there exist several sub-versions of ADHD. A description of any one of these research communities is the description of another microclimate, which operates within its own arrangements and assemblages. Which is why in many cases, we must think of the many well-understood experimental systems as being "black-boxed" from the point of view of the actual people who are involved in those process of decision-making that we are investigating in anthropological or sociological studies that employ this heuristic model I suggest, to help clarify the analytic factors that need to be reflected in creating the research..

An "experimental system", such as a specific type of drug-trial in evidence-based medical research (Random Controlled Trial) can be utilized as a component of other experimental systems. It doesn't matter that some components may hold severe biases, such as gender, ethnic, age biases or conceptual biases. In regard to ADHD drugs, we must ask if we will not find a black-box labeled "the industrial human condition", meaning a definition of what it means to be a normal human being that has emerged during experimental research in the scientific discourse of the late nineteenth and early twentieth century. This *normalcy bias*, therefore, leans towards the elimination of fatigue in (optico-centric) single-task completion by Caucasian males between the ages of 20 and 40[18].

Respectively, Hans-Joerg Rheinberger distinguishes two aspects of experimental systems: the part under investigation, *epistemic things*, and the well-understood part that provides a stable context for experimentation, *technical objects*. It has been argued that in the development of

experimental systems, it is often required, at least in biology that a process of domestication is employed for particular organism to create effectivity in the laboratory environment. This may mean the creation of relatively homogeneous lines or strains and the tailoring of conditions to highlight the variable aspects that scientists are interested in. Scientific technologies, similarly, often require the development of a full experimental system to go from a viable concept to a technique that works in practice on a usefully consistent basis. For biomedical practice, in general, the same is true, since its experimental systems are put to use in the clinic. The "patients" need be disciplined (Foucault).

In short, once our epistemic curiosity is attracted by some thing, we can call it an epistemic object, which in the sciences are, of course, are the fundamental objects of research. In this regard we may as questions such as:

- What is the relationship between epistemic objects in the sciences and our pre-scientific notions of them?
- What are the dynamics by which epistemic objects come into being?
- How are epistemic objects articulated linguistically?
- What role do empirical methods play in the constitution of epistemic objects?
- What is the relationship between the shifting status of epistemic objects and the *supposedly* atemporal character of scientific results?
- How is this supposition created?

In finding answers to these and many other questions, the linguistic <u>analogy</u> is a sound analogy for the internal relations between linguistic as well as non-linguistic signs and epistemic objects in science hinges on the both the constitution of scientific objects and the communication of the results of scientific research. Those are certainly conditionally bound to description and articulation by means of signs and interpretation. Between scientists, there are no epistemic objects without signs and interpretation. Even pictures, such as fMRI scans are interpreted between doctors or between doctors and their patients by use of language. There is a relationship between modeling and epistemic objects, for many epistemic objects can be construed as models. Here, we must distinguish a) between the objects of the history and philosophy of science that are analyzed as discourses (*discourse analysis)* and b) the objects of the sciences themselves as well as the objects in everyday life, which are discursive for they are the momentary products of a discourse and analyzed as such (*discursive analysis*).

Therefore In theory (*discourse* point of view) as well as in practice (*discursive* point of view),

epistemic objects are subject to changes, modifications, revisions, expansions, enablements, constraints, dynamics, and temporal character.

 The model that I am suggesting in this study is, therefore, a descriptive model of the functions and mechanisms of regimes of knowledge and truth production. If we are to avoid arbitrariness of the *anything goes* kind, we must lose the source of this arbitrariness. This source can be easily identified as us, the human beings with their – with our – tendency to be capricious and arbitrary. It is this tendency and its determinatives that we want to account for. Therefore, it cannot be part of our analysis or we would intermix *explanans* and *explanandum*. Any serious attempt to describe a microclimatology of truth for any human knowledge production must evidently be an anthropology without anthropos. This is a risky, dangerous, and precarious venture at best. It must be so, for the concept of *anthropos* itself, like the concept of *truth,* is anything but innocent.

"Truth is a local phenomenon, much like a microclimate."

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[1] In order to relate to the contemporary term of "embeddedness" of these enunciations (which can be textual or non-textual practices) or discursive objects, I have, on occasion, referred to them as "embeds", short for embedded objects/actors .

[2] Gaston Bachelard, in the account of Rheinberger (2006: 37ff.), has come closest to the conceptual frame of reference I suggest. The spatial constraints of this paper deny me the opportunity to discuss this in more deatil and I will have to postpone this to some other opportunity. Suffice it to say, Bachelard describes ideas that are inherently similar to the concepts I use as intellectual millieu, assembly, arrangement, assemblage, enablement, constraints, micro-climate of truth, and, of course, Knorr Cetina's epistemic culture. The idea that that scientific truth are shifty like geologic formations and like the climate, has been uttered before, as well, as I was recently reminded, namely by Isabelle Stengers and Ilya Prigogine. Similarities of my position with Ludwik Fleck are certainly also worthy of discussion, since I do use terms like style of thought or style of rationality. However, I differ in nuances that have siginificant consequences in the practical application of the model, which we do not have to deal with here.

[3] Donald Levine, by contrast, has provided a different approach in recent years, even if his approach was viewed – by Joas and Camic (2003) – as exemplary of the "dialogical turn". With the inclusion of Aikido and the *uke-nage structure of interaction* (an energetic model of the doctor-patient relation), the somatic elements that are included in the "dialogue" transcend or, rather, complement the dialogical perspective rendering it *dia-physical* or *dia-psychsomatique.*

Wiley (1994, 2006) argues that his concept of "dialog" is based on the whole tradition of American Pragmatism from Peirce to James, Cooley, Mead and Dewey. I have argued elsewhere (Stingl forthcoming), that there are two different types (generations) of American Pragmatism. Influenced by the German Rudolf Hermann Lotze and starting with Emerson, the first generation follows in a Kantian tradition of biological philosophy, teleomechanism, and the romantic conception of life (Lenoir 1982, Richards 2002) in the context of an experimentalist, laboratory and clinical culture. Peirce, James, and Cooley belong to this first generation, whose final successors are, to some extent, Karl Jaspers in Germany and the Human and Social Relations movement at Harvard University, most prominently, of course, Talcott Parsons and Chester Barnard.

Mead and Dewey are part of the second generation. Mead is more of a transitional figure than Dewey. However, with Dewey's conflation of Hegelianism and Darwinism (Rorty 1995) to bald naturalism and the rise of "physicalist reductionism" in logic/philosophy and economic theory with Russell, Frege, and Jevons, a new and influential way of reasoning was created that had lasting repercussions. Speaking of an epistemic rupture would not belittle the events that characterized the decades at the turn of the 19th to the 20th century. Therefore, Wiley's (2006) and my account (forthcoming) of the developmental conceptual history of American Pragmatism differ greatly with regard to the first generation of Pragmatism. Without denigrating the legitimacy of Wiley's account, I argue that a picture of either James or Peirce, to be considered comprehensive and and adequate to the genealogy of the history of ideas, must account for a larger "intellectual world" in the 19th century, than most 20th century accounts allow for. While this cannot be adressed properly here, aside from my own work, I point to only a few different accounts of the 19th century (Lenoir 1982, Richards 2002, Valsiner/van der Veer 2000, Grant 2000, 2006,n.d., 2008) Peirce (Pape 1989, Schoenrich 1990, West 1989), or the "remainders" of the 19th century (Sebeok no date, Friedman 2000, Scarfe 2009).

[4] However: Archer's delineation of „modes of reflexivity" that are derived for practical or rather „ideal-typical" uses for sociology, while highly intelligent and certainly insightful, is its preference of the „meta-reflexive type" strikingly close to the type of the „trustee" in Parsons' frame of reference.

[5] An explication of various aspects of synchronic and diachronic perspectives that lead to semiotic hysteresis, with a „physics or physical" kind of problematization can be found in: Velasco 2009. Semiotic hysteresis can be translated into another type of theoretical language, suggested by Christine Schachtner (1999) in following Lakoff and Johnson (1980) as the „creative force of metaphors". In short, the forces behind „semantic agency" are, thus, a *meta-force (*and bodies are archives for metaphors, practices and semantics).

[6] Aside from the fact that, following the ideas of Odo Marquard who agrees with Wiley and Archer through his teacher's, Joachim Ritter's motto that „Future needs Provenance", plus that in semitioc terms this would constitute semiotic hysteresis, we could say that this „operation" is not proactive but only a form of *compensation*.

[7] People like to forget that the „mapping" in cognition studies was introduced into sociology most prominently by Tolman in his cooperation with Talcott Parsons and his discussion group Towards a General Theory.

[8] Network Theories such as Pollilo refers to in his paper, organization theory on membership (including the work of Niklas Luhmann whose systems theory has its true merit in the sociology of organizations), and Peirce's and Royce's ideas on community would have to be discussed in more detail at this point, if we had more space.

[9] Incidentally: Any reference to Peirce nowadays should not shun from reviewing his work with regard to Schelling (Pape 1989, Schoenrich 1990) and the transformation of medical semiotics in the early 19th century. Wiley's historic account of Pragmatism (2006) would be much richer, if he were to reference the developments in medicine and biology, which gravely affected the intellectual world of the 19th century. It is impossible to read Iain Hamilton Grant (n.d., 2000, 2006, 2008) and not to understand how different 19th century science and philosophy likely was from the accounts we have come to accept through the lens of the twentieth century: Romantics and *Naturphilsophen* were in general more „scientific" than most of their contemporary critics who probably have never dissected a corpse, experimented with substances with unknown effects, or charted stars.

[10] In the reconstruction of any development of a knowledge regime, the distinction between internalism and externalism tends to be a deeply contested territory. Around the 1970s, this debate had a fierce climax in the history of science (Shapin 1992).

[11] The lack of proper reception of Chinese medicine, for example, has to do with the arrangements of Western medicine, not the dispositions. A change in dispositions, brought forth through a decline of health-related quality of life (HRQoL), could enable an increase in relations between Western concepts and Chinese concepts that could overcome the institutional constraints. However, such a change would eventually, set up new constraints as well. This much should be

clear: There will always be an interplay between enablements and constraints.

[12] My model is, therefore, descriptive and not explanatory.

[13] In that hierarchical order. Reliability is, actually, less important than the other two. However, it seems as if current bureaucratic procedures of research management and funding often care more about the fulfillment of, mostly quantitative, reliability criteria than the idea that something needs to be pragmatic, communicable or valid.

[14] Hence, the dent in my sympathies for the Cambridge School, Pocock and Bevir. I think they should have gone further than just „resting on language".

[15] An aleatoric uncertainty factor.

[16] What is virtualization?

The process of virtualization, as we want to understand it, is to some degree derived from the works of Deleuze and, more recently, Meillasoux and Latour (see the insihgtful descriptions by Graham Harman), while it can also be found in the recent work of Tim Lenoir on N. Kathryn Hayles and Michael Hansen. Knowledge regimes and information orders (the term, according to Simon Schaffer in his 2008 Harry Camp lecture, has been introduced by historian Christopher Bayly) are mutually constitutive. In every concrete empirical situation, which I call in the model the *assembly*, the knowledge regime and information order "clash" with their concrete, empirical entity. Each concrete, empirical entity – for example an individual psychosoma (the person/organism) - as an entity in the world has potentialities it can realize in a given situation by which it can constitute or rather confirm, condense or deny potential information orders. Virtualization is the process by which the knowledge regime and the information order of a epistemic culture (e.g. a scientific community or health care administration) moves away from the possibility to represent the potentialities of the concrete, empirical entities, in so far as the information orders constituted in the realization of these potentialities have no power to deny or confirm the information order of the epistemic culture. The data sets produced for the practical use represent the information order of the epistemic culture and are as independent from the potentialities of the concrete, empirical entity as far as the process of virtualization has progressed.

[17] Similarly, Paul Starr (1992)

[18] The history and the current effects of this particular „black box" are the subject of my research-efforts.