The Basic Framework in the
General Sociology of Harrison C. White

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"Despite the continuous flow of 'new developments', the social sciences appear to be in the doldrums, suggesting that the foundations of these sciences are not yet right". So read the very first lines of *Identity and Control* (1992a), the major theoretical book of Harrison C. White who hereby boldly triggers off a profound critique against almost all the social sciences of today. Putting on trial much of the existing social theory, be it structuralist or actor-oriented, he not only accuses them of being abortive and paralyzed but also calls into question their very claim of being scientific approaches to social reality. He then continues by exhorting the reader to abandon them all and start afresh -this time building on a truly scientific foundation.

The present paper is an attempt to explore the general sociological frame of mind from which such a harsh and provocative judgment is launched. It also sets out to explore White's overall thrust, and promise, to re-ground social sciences on a new basis, and to examine the position from which his own alternative takes off. In other words, the primary purpose pursued here is to arrive at a somewhat clear and coherent picture of the basic characteristics of White's sociological thinking, i.e. the way he conceives social reality and seeks to grasp it, or in more technical terms, the ontological outlook he adopts, the particular pertaining methodology he employs and the interplay between the two, showing how one is affected by the other[1]. Such a picture is, apparently, not only a helpful means but also a necessary precondition for comprehension and appreciation of the substantial ideas of a social thinker as original and innovative as Harrison White.

Though crucial, the task is however by no means an easy one because, due to White's style of authorship, there are remarkably few explicit statements on these issues. Whereas he rallies

against the false ontology that underpins much of the contemporary social sciences he never really takes the effort to elaborate his own alternative. Hardly spoiling his readers with detailed accounts, he instead briefs us rapidly on his ontological stance by holding hasefully that "there is no tidy atom and no embracing world, only complex striations, long strings reptating as in a polymer goo, or in a mineral before it hardens" (1992a:4) -opening up, only for a fugitive moment, a window to an amazing landscape never seen before.

The same goes for his methodology. There are of course many fragments of explicit statements spread here and there in the enormous bulk of his production, but elaborated articulations and systematic presentations of his methodological standpoints are simply non-existent. A couple of pages of short hasty comments in his *Preface* to *Identity and Control* is the closest he comes to a detailed and explicit account of his methodological view. Far from illuminating, these comments, taken together with other hints made elsewhere, inescapably leave one with the confusing impression of a jumbled mix of various and incompatible standpoints, lacking any apparent consistency. While he, for instance, repeatedly advocates a "phenomenological" approach to the objects being studied, he also employs the notion of 'social facts' with clear references to the Durkheimian sense of the expression. Indications of a structuralistic approach that are associated with this expression get only boosted by White's outspoken ambition to develop a certain version of structural analysis and by his preference for structural explanations. And, while he sets for discovery of general structures, processes and mechanisms valid across levels, scopes and realms, he nonetheless adheres explicitly to "an epistemology of middling level, in between individualism and cultural wholism" (1992a:xii).

The situation, however, is not as dismal as it appears initially. Despite White's reluctance to address this type of issues directly, we are after all assisted in our search by the best possible guide, i.e. by the way in which he actually goes about in his substantial work and enacts his vision of social science proper. Thus, rather than getting involved in a dialogue with him and carrying on a theoretical discussion of the conventional type, we are made to abstract this vision from his actual practice, rendering the situation look more like watching a craftsman silently at work, to learn about his tacit skills. Moreover, the task has several aspects, each deserving a book length treatment of its own. The first one obviously regards identification of the main elements in White's general framework of sociological thought. Given the variety of

research areas and the diversity of topics that his scholarship covers, we seek, in other words, to distinguish the common traits and integrative elements across the kaleidoscope of his work. A detailed and systematic presentation of these elements and the relations amongst them is intended to lay bare the basic structure of his framework, putting us in a better position to appreciate its coherence, strength and novelty.

A second aspect concerns keeping track of these elements across White's production in order to see how they have evolved through time. Since White's effort to articulate a general theory culminates in *Identity and Control,* it is mainly the concepts and ideas presented in this book that are in the foreground of this study, and their historical development has been traced back only to the extent that has been considered necessary for illuminating their later usage. Yet, as we proceed, we can see how some of these elements do make up a stable and durable core in White's sociological thinking and how they persist throughout his production, even though they continuously get modified and receive significant refinement and sophistication. A further aspect to be addressed in the following pages regards the relation of White's approach to classical as well as contemporary sociology. Trying to avoid deforming into commonplace something highly original, here we look only for some points of reference within the more familiar framework of past and/or current strands of sociological thought, primarily for keeping ourselves oriented in the foreign landscape White takes us to, but also for making more visible the contrasting novelty of White's approach.

Famously, one of the sustained controversies holding a firm grip on sociology concerns the way in which its methodology should resemble or differ from that of natural sciences in general and physics in particular. As known, due to their spectacular successes, these sciences have ever since the birth of sociology had a magnetic appeal on the discipline and never ceased to do so -always standing as the principal model in a remote distance, inspiring many attempts with varying degrees of sophistication and success. Reading through White's work, one can hardly avoid noticing the numerous traces of the impact of his natural scientific background on his sociological thinking, initially making us suspect that we are facing yet another simple-minded and common attempt at transposing the natural scientific mode of inquiry into the study of social phenomena.[2]

This impression is reinforced by the observation that White's approach is on the whole highly formalistic and often includes a very advanced mathematics. It is also reinforced by White's ambition to launch his theory, presented in *Identity and Control*, as a general one with very broad and far-reaching, if not universal, applicability, even if the book does not include one single mathematical equation or formula. Yet, only misleadingly simple, the relation between White's sociology and the natural scientific mode of analysis and explanation needs to be carefully scrutinized before any solid and reliable conclusion can be drawn. No doubt, there are in White's work numerous and clear pieces of evidence which suggest that his sociological thinking has evolved in a close relation with the natural sciences. Yet, making a first effort at such an investigation, this paper moves toward the tentative conclusion that there is nothing in White's work indicating that his approach represents a repetition of previous abortive efforts. On the contrary, given the deep, subtle and multi-layered character of the relation between the natural sciences and his sociology, White, in his own tacit and unverbalized way, offers a novel contribution to this prolonged controversy. Exploration of White's relation to natural sciences and his contribution is therefore yet another aspect of our task.

To anticipate what is to come, we may here attempt at a brief presentation of the content of this paper. Out of a profoundly critical assessment of current social theory and its dominant paradigms of atomism and holism, White takes a position in the middle, a strategic multi-dimensional move that constitutes a salient and stable feature of his sociology. This move to the middle means, on the one hand, that he takes social interaction as the valid and proper raw material to start with. That is, interactions among real people in concrete settings are regarded as the main adequate source of observation data to be used for theorizing. At this level White also finds social organization, the subject matter of his sociology to be theorized. Furthermore, rejecting both the holist and atomist accounts of social organization, he also sets to found his own alternative mode of explanation at the same level; hence his particular version of structural analysis underpinned by a network notion of social structure.

Retaining the same basic framework, White however develops with time in a phenomenological direction, and this is an intellectual development that is primarily characterized by the adoption of an entirely different way of conceiving the world, namely, the relational mode of thought. On this basis, White then embarks upon a reconstruction of his

sociology, a reconstruction that involves incorporation of some substantially new insights into the earlier framework as well as a re-articulation of many old notions anew. While still holding a middle-ground position, White redefines many of his basic concepts such as interaction, tie, role, structural constraint, etc. and works toward a whole new synthesis, yielding an entirely novel conception of social network on which he builds an idiosyncratic general sociology. As this paper unfolds, we shall try to explore various aspects of this development in detail. We shall also, as mentioned above, try to tie these elements to some more familiar traits in classical and current sociology, parallel with an attempt to explore White's relation to the natural sciences -an issue with which we now begin.

White and the Natural Sciences

Only twenty years old, White graduated in 1950 from the Massachusetts Institute of Technology (MIT) and five years later earned a Ph.D. in theoretical physics at the same school. Though he later shifted to social sciences and received a second Ph.D. degree in sociology in 1960, he seems to have maintained his ties with natural sciences and never cut these off entirely. While at Harvard, for instance, he ran an inter-disciplinary seminar for three years (1975-1978) on mathematical models across the social and biological sciences (see e.g. White 1990a:82). [[Interview material. Christofer Edling says "White told me he decided not to publish in both fields, nor to engage in ... debate after he turned into the social sciences".]]

At one level, White's original training in, and continued contact with, the world of physics finds a clear expression in his recurrent references to, and even borrowings from, physicists' models in studying social structures and processes, indicating that it is the schooling in theoretical physics rather than in classical sociology which, at least initially, provided the main frame of reference in his analysis of social phenomena. White's works, especially the early ones, are abundant in examples of this. One is to be found in a paper on modeling stochastic processes from 1962 where he holds that "(e)lementary events such as (individuals' arrival at and departure from spontaneously formed and unstructured casual groups as in cocktail parties) can most conveniently be thought of as inherently random events governed by laws analogous to those followed in radioactive decay processes" (1962:155). Or, in 1964 he writes: "(i)t should be possible eventually to find parallels between kinship structures ...

and modern accounts of the atomic structure of magnetic crystals and of electronic switching circuitry" (1964:195, note 1).

Furthermore, in an article from 1971 jointly written with Francois Lorrain, White seeks to develop a more adequate account of complex social structures and maintains that, in pondering over "how to get at the interweaving of pair relations into the complex tapestry of social structure and process, (t)he theory of electric circuits comes to mind as an analogue, particularly in the elegant formulation of Kron (1939), ably simplified and restated by LeCorbeiller (1950), or in the formulation of Slepian (1968)" (White & Lorrain 1971:53). And a couple of years later White (1973a) elaborates on the idea of applying insights won in studies of stochastic flows in technological networks of telecommunication systems to investigation of informal social networks, through which run stochastic flows of information, gossip, uncertainty, material resources, etc.

White (1997a:54) himself admits that at least a couple of his major early works, namely, *An Anatomy of Kinship* (1963) and *Chains of Opportunity* (1970a), have been influenced by the solid state physics in which he was first trained.[3] He, however, makes no attempt to make this influence appear as something of the past only and, in fact, points out *knot theory* and its application to physics as a source of inspiration still capable of providing insights useful to sociological analysis.[4] After giving a modern and up-dated summary of this theory, he holds that "(o)ne of the most remarkable anticipations or previsions in the history of natural sciences provides not just an analogy but possibly even a direct lead to modeling the central phenomenon of social action, viz. interactive social constructions of reality among us. It is a prevision of knot theory and its application to physics" (1997a:62-3).

In addition to such explicit references, however, one can also find a few other cases in which natural scientific conceptions seem to have been the model or, at least, provided guidance to White's study of social phenomena. Queuing situations and open systems are two such conceptions.[5] In a paper from 1958, *Queuing with Preemptive Priorities or with Breakdown*, the authors, White and Christie, put forth an alternative model for specified analysis of priority assignments, congestions and delays in waiting line situations, in which the items that arrive into open systems with a central server are ordered and processed with respect to a hierarchy of priority classes. The model offers, it is argued, not only important specified

insights about the effects of oscillations in arrivals, but also makes possible description of, and comparison between, two or more queue situations with the help of Markov chains. This model, which is held to be of general applicability, is however intended to open up an avenue to the analysis of similar processes across various contexts, capturing an important basic and general feature in the operation of complex open systems. This is easily seen in White's works on social mobility, where the notion of open systems, with or without a central agent, appears to have provided the basic vision of the phenomena being studied. In *Control and Evolution of Aggregate Personnel: Flows of Men and Jobs* (1969a), *Chains of Opportunity* (1970a), and *Stayers and Movers* (1970c), for instance, one of the main underlying ideas is that national labor markets, or segments of these, can plausibly be analyzed as decentralized, natural open systems through which fare flows of compound entities, i.e. vacancies.

[[On general character and relevance of models of basic queuing situation for social phenomena see also 1963c:87-8, where White, exemplifying it by the "suits arriving at a court" holds that "even 'deep' problems in sociology are intertwined with congestion processes similar to these at bottom" (1963c:88). And to give yet another recent example of White's direct reference to natural sciences, he admits that he "has learnt from post-DNA-biology that understanding 'space' in those sciences' phenomena is the key to its dynamics" (1992d:211). See it! There is more.]]

In the first-mentioned work, an article based on White's well-known *Chains of Opportunity*, he explicitly points out such a system as a more appropriate image and holds that "(s)ome future organizations may eventually have a planning staff with the technical expertise to deal with all (the mobility) effects over long periods in a centralized and rational way. At present it seems unavoidable that in a career frame governed by the dynamics of deficits, the numbers of jobs and men in various strata will evolve in complex and largely uncontrollable ways. Just as any central authorities will have little real control over personnel composition, so most individuals will have little real control over careers. At the level of aggregates, the flows of jobs and men may be determined within a quite stable causal structure, but it is the determinism of a natural system open to the environment rather than of a closed, rational, control system" (White 1969a:9).

[[This kind of cross-boundary moves is not strange and White often does it. He has a sharp eye for seeing things across. His triad of feudalism, decentralization and political systems (1963c) is an example of such moves, common in White's work.]]

Though the connection may at first appear rather weak and remote, one of the cases that the same basic conception is implicitly applied to is the French art world of the eighteenth and nineteenth centuries. These studies were conducted at about the same time as *An Anatomy of Kinship* and *Chains of Opportunity* (1963). Even though no model is ever used or referred to explicitly, what the authors, Harrison White and Cynthia White, report on in *Institutional Change in the French Painting World* (1964) and *Canvases and Careers* (1965), can be read as basically an analysis of an open system, i.e. the Parisian art world, in which the new entering professional painters from outside are ordered, forwarded and matched into the fixed number of available positions, according to judgments made by a central arbiter of taste and quality, namely the Royal Academy.[6]

["White and White (1965) document in *Canvases and Careers* that one of the major causes for the breakdown of the Academic system in painting was the professional crowding of art institutions, both those of a strictly educational nature and those through which painter reached the public. There were simply too many painters in Paris for those organizations, planned earlier when the number of students and exhibitors was small, to function efficiently" (Riggins 1885:252).]

As evident by examples above, White's production clearly demonstrates his readiness to borrow from physics or at least to let himself be inspired by a physical imaginary, initially leaving the impression that he is inclined to mold his sociological approach after models taken from this discipline in a fashion that omits the substantive differences between the two realms of natural and social reality. Yet, there is actually no evidence in the bulk of his work -such as search for universal laws- supporting such an impression. Nor is this impression confirmed in anyway by White himself or any of his former students and colleagues who have been interviewed. Nonetheless, as mentioned before, one can still discern in White's sociological approach a close and complex relation to natural sciences. There is to be found in his approach also an interesting, novel and significant, though barely recognized contribution,

to the methodological controversy of sociology -a contribution which, if properly explored, can perhaps take the issue further and open up new prospects in dealing with it.

Scientific Disposition

At its most basic level, what underpins White's relation to the natural sciences is his adoption of what is the basic promise and essential attribute of the universally valid scientific procedure proper, as it is most firmly established in natural sciences. Put differently, we find in White a deeply fostered basic scientific attitude or disposition, due to which his relation to the objects he studies rests on a sincere/humble respect for reality. Induced by this disposition, White's production clearly demonstrates a strong empirical inclination and is characterized by a critical stance towards unfounded speculation as well as a quest for the concretization of concepts and ideas employed, seeking to provide them not only with concrete connotation and substance but also with detailed and exact accounts. Rather than dealing with abstract theoretical issues his work is, in other words, characterized by an analytical focus on concrete, tangible and empirically accessible social phenomena, aimed at providing detailed and exact accounts of these, joined with a true scientific humbleness which finds expression in his openness, sensitivity and adjustment to empirical findings rather than paying a lip service to them only.

White's cultivation of such a scientific attitude does not however mean that he, like many others, merely seeks to subject his inquiry to the command of empirical findings in the conventional style. Nor does it imply, in any sense, a shift to pure empiricism, converting sociology into a mindless business of fact-gathering void of any theoretical imagination. On the contrary, very early, already in his doctoral dissertation, White (1960:11-14) finds conventional survey analyses insufficient and even defect as proper tools to sociological investigation and expresses openly his dissatisfaction with them. On the other hand, White seems to have always considered sociology as a generalizing science, and his work is, indeed, fused with a quest for identification of properties of social reality that are of considerable generality and, thus, apt for de-contextualization. Requiring a more detailed treatment, these are however questions to be dealt with elsewhere. For now, we are primarily concerned with exploring the more profound aspects of White's empiricism, namely those aspects that make this empiricism a distinctive feature of his sociology.

In its deeper sense, White's empiricism comes to a very clear expression in his critique of contemporary social sciences, a critique the methodological dimensions of which should be explored fully before we can get a hold on its ontological content. In rallying against contemporary social sciences, what White voices is essentially a critique of the unquestioned prevalence of *constructs*, i.e. thought objects or theoretical constructions constructed by the social scientist who does not entirely submit his theoretical imagination to the rules of scientific methods. As a critique of unconstrained and unfounded speculation, it is also coupled with a desire to move away from such constructs and with a committed search for concretization, i.e. a quest for making empirically more accessible what is the object of theorizing.

It is on the basis of this deeper empiricism that White criticizes major prevailing paradigms of social sciences of today for departing from, and building upon, constructs or mythical concepts, invented to describe, analyze and understand social reality but substituted for that reality itself. Regarding 'society' and 'individual as person' as constructs, White (1992a:8-9) rejects the dominating paradigms in social sciences on the basis that, though apparently competing, they both fail to pay due attention to the constructed nature of both individual and society. Having stopped dealing with tangible phenomena, each paradigm takes its building block as something unproblematic and naturally given which is not in need of being accounted for. He, in other words, declares almost all current social sciences to be wrong-headed, arguing that they, instead of starting with empirical reality and elaborating theoretical constructions on that basis, begin with some purely theoretical constructions and substitute these 'constructs' for reality. In short, such approaches can never be scientific because they build on an inappropriate or even false ontology.

What White seems to be firing at here is 'society' as it is conceptualized in the standard holistic perspective. Being a troublesome concept with too vague a connotation, it typically refers to an all-embracing whole or totality which, clearly separated and demarcated from its surrounding, has an independent, self-contained and persistent existence. For White, this is a 'construct', i.e. a thought object or an imagined entity that is void of empirical foundation, a fabric of imagination that does not correspond to the actual and tangible reality. As such, this construct starts us with false presumptions and therefore represents an inadequate point of

departure. And yet, on this "myth of society as some pre-existing entity" (White 1992a:9) structuralism builds its architecture.[7]

This appeal to 'society' and the pertinent structuralist mode of analysis is, according to White, only a reaction to the construct of 'individual as person', as it is devised within individualistic approaches. While both these paradigms of social science share the same guilt of building on myths, the main target for White's criticism is nonetheless "the mirage of persons as atoms" - a mirage that he holds responsible for breeding the "obverse mirage of society as an entity" (1992a:3).[8] It appears that what White is targeting here is the prevalent atomist notion that individuals are essentially autonomous and self-contained entities, fundamentally distinct, different and separate from one another. Asserting that "there is no (such) tiny atom" (1992a:4), White rallies against the central position ascribed to 'individual' in much of the social scientific thought and regards the construct of 'individual as person' as a purely theoretical invention or a concept with "uncertain scientific status" (1992a:192). He also holds that, despite its centrality in and indispensability to current social theory, no discipline seems to be willing or able to offer a proper account for this construct which subsequently keeps "being shunted aside" as "polluting" from the center of activity in each social science separately (1992a:3). In consequence, not only this construct remains "opaque to research" but it also constitutes an obstacle to "effective theory of social action" (1992a:3).

[['Construct' is a new term for 'category' and White's critique now is a up-dated version of his earlier criticism of 'categorical' analysis, i.e. variable analysis, and the particular yet common 'categorical' conception of social structure derived thereby.]]

It may be useful to point out that, despite many substantial differences, White's critique of theoretical constructs shows some basic methodological affinities with that of Durkheim who, deeply discontent with the unscientific character of social theories of his time, accuses them of being nothing but "an ideological analysis". Man is, according to Durkheim (1982:60), naturally endowed with capacity of reflexive thought and "cannot live among things without forming ideas about them according to which he regulates his behavior. But, because these notions are closer to us and more within our mental grasp than the realities to which they correspond, we naturally tend to substitute them for these realities, concentrating our speculations upon them. Instead of observing, describing and comparing things, we are

content to reflect upon our ideas, analyzing and combining them. Instead of science, which deals with realities, we carry out no more than an ideological analysis". Criticizing this mode of analysis for confusing *preconceptions* or *prenotions* of reality with reality itself, he also adds "(i)t is not ... by elaborating upon them, however one treats them, that we will ever succeed in discovering the laws of reality" (1982:61). To advance, sociology must therefore abandon these illegitimate surrogates that it has hitherto more or less exclusively been concerned with and turn to what is its true subject matter, i.e. social reality itself.

Echoing Durkheim's methodological critique, White similarly intends to help sociology recover from its current state of stagnation and secure its scientific character, a prime pre-requisite for this which is the cultivation of a "certain mental attitude" toward social phenomena.[9] That is, only by taming the sociological imagination and disciplining it in accordance with the rules of scientific inquiry proper, we can hope for a decontamination of the mind from the polluting constructs. A truly scientific sociology is, in other words, an inquiry that manages to break away from constructs, preventing the old ones from creeping back as well as safeguarding against invention of new ones. To achieve this requires a sincere and persistent commitment of the social scientist to reality, i.e. to start up and build on empirically observable reality alone, willing to be carried along wherever it leads him or her while refusing anything not fully grounded, not exactly accounted for on this basis. Only in this way, White argues, we may, in our search for adequate foundations for social sciences, escape the pitfalls of the constructs.[10]

Move to the Middle

At the first glance it may appear that White, discontent with the classical controversy of sociology, seeks to strike a middle ground in order to offer yet another solution tailored to link the two so-called micro and macro levels of social analysis. Yet, it should be clear from what has been put forth hitherto that such an interpretation would be totally misleading and would nullify the very essence of White's critique of the constructs. Even though he explicitly advocates a middle ground approach, between atomism and holism, what he has in mind is by no means the establishment of micro-macro links or a mediation between the individual and society, simply because this would imply an acceptance of both of these as unproblematic pre-existing realities. Finding both individualistic and structuralistic standpoints inappropriate and dismissing the long established constructs associated with them, White instead seeks to

move away from the constructed towards the factual, away from the imagined towards the actually existing, away from the myths towards realities, and away from the abstract towards the concrete.

Induced by his scientific disposition, White turns instead to the middle level of analysis in his search for a new and more scientific foundation. This move is, indeed, a very crucial feature, or even the very cornerstone, of White's sociological thought. This positioning in the middle is, in other words, the most salient feature of White's sociology, and it remains the same throughout the years, governing his approach to social reality even when his substantial outlook increasingly alters in a phenomenological direction. Furthermore, it is also a move that not only gives rise to much of the novelty of White's approach, but also, due to a lack of proper explication, is the source of much of its difficulty as well as its ambivalence. Informed by some insights from modern physics, this choice of the middle ground is indeed a strategic one that poses a complex multi-facet issue with both methodological and ontological dimensions and finds many expressions. To understand White's social theory, it is therefore necessary to keep track of this move and its various aspects and manifestations as well as its implications. Without observing this move, it hardly appears possible to discern and assess any consistency across White's production. Nor would it be easy to follow the development of his sociological thinking over time, especially his gradual adoption of a phenomenological mode of approaching social reality.

This move involves, however, introduction, adoption and further elaboration of an array of novel notions which, geared into each other in a complex interplay, together make up a coherent core, which is to constitute the new foundation for sociology moving it up to an entirely different level. To begin with, there is among these notions the centrality of social organization, this omnipresent feature of human existence, as the main object of theorizing for a discipline that primarily is about organized human co-existence. With this analytical focus on social organization as the main object to be explained, there is in White also a certain version of structural analysis and some other related ides, employed as the chief mode of providing the most adequate accounts of social organization.

Social Organization

From the very beginning White seems to foster a strong puzzlement over, and a deep interest in studying, how complex social systems or organizations come about, are sustained and reproduced over time, often without a master plan or coordinator authority. His occupation with such organizations finds an early expression already in *Anatomy of Kinship* from 1963 where he expresses clearly his fascination over kinship structures which, even when found in most primitive societies, display a high degree of complexity and prove to be "amazing feats of social engineering" (1963a:6). To this interest witnesses many other works which indeed deal with complex social organizations of various kinds observable across realms and levels, including the French painting world, American theater, production markets, the organization of multi-selved personality, etc. Moreover, the centrality of complex social organization in White's sociological thinking may also be indicated by the frequency with which White has taught the topic during his years at Harvard, 1963-1986. Almost annually with few interruptions in the academic years from 1963-4 to 1976-7, he gave there the course *Anatomy and Control of Complex Organizations*. Later it was replaced by other, still substantially similar, courses, *Complex Organizations* and *Organizational Processes in Historical Context* (both given jointly with John F. Padgett) and *Complex Organizations in Theory and Practice* (given together with Robert G. Eccles).[11]

Demonstrating another dimension of White's relation to natural sciences and more specifically to solid state physics, this interest appears to reflect his initial occupation with the emergence and maintenance of complex and dynamic organizations in the natural world.[12] More concretely, it seems to originate in observation of how atoms, the constituent units of complex molecular configurations, join together, how these formations emerge out of, and embrace, countless decentralized interactions among microscopic units, driven towards and away from each other by multiple forces of attraction and repulsion, of attachment and detachment, and how these structures, while in ceaseless interplay with their environment and caught in the firm grip of contingencies, prove reproducible, persistent and durable. After having studied in detail the *Superlattice Stability* in 1952, White investigates in *Atomic Forces Constants of Copper from Feynman's Theorem* (1958), more closely how metal crystal lattices, these astonishing conglomeration of atoms, are sustained and changed due to

their dynamic properties at the atomic level, i.e. the forces among nuclei that make up such lattices.[13]

Carried over into social sciences, the centrality and persistence of this interest does not exclusively stem from its function as a substantial link in a transitory stage of intellectual change from natural to social sciences. Rather, social organization, taken in the broadest sense of the term referring to an ever-present phenomenon observable across spheres and scopes of social life, constitutes a very stable and focal element in White's sociology and, indeed, makes up its very subject matter, i.e. its explanandum or, in White's own words, its "main object of theorizing" (1992a:16). And it is due to this central position in White's analysis that the term, hardly surprisingly, tops the glossary in *Identity and Control* over the main concepts in his sociology.

Having said this, the question that runs to mind immediately is in what sense and to what extent this focus on social organization is related to White's move to the middle. At a substantial level, this focus on social organization indicates how White from the very beginning, directs the focus of his analysis towards the level of the 'social' i.e. the level of concrete interaction, where the proper raw material of sociological inquiry is to be found. In other words, beneath the centrality of social organization in White's sociology lies the analytical primacy that he tacitly accords human interaction, i.e. the very substance of human co-existence. Expressing a very fundamental aspect of the move to the middle, White takes the concrete, omnipresent and actually ongoing interactions among real people as the raw material of his analysis. For him, it is only observations concerning the process of human association that qualify as the proper empirical material to start from and to build on.

Social organizations thus constitute the main object of theorizing because they, probably seen as social crystals, are the tangible and durable outcome of the interactive process among their component units and because they are the very site in which human sociability and togetherness, this very essence of social life, has come into some accommodation and regularity. Being a prime characteristic of human condition, interaction process embraces all kinds of social connectivity or relatedness, from simple casual encounters of two strangers who take each other into account and orient themselves to each other though only momentarily, to any type of deep and durable relationship. Yet, given the quest of science for

discovery of general patterns, what is of prime interest to the analyst is attached to that which is both possible and worth of being studied, i.e. those features in interaction processes that are recurrent and reproducible. Social organizations are thus the site in which interaction process, the process of conjunction of people, has gained some concrete reproducibility and, thus, has become accessible to observation. Social organization is, in short, where it becomes possible to track down and capture the logic of the emergence of the orderliness out of the spontaneous and casual.

[[Apparently, there are, for White, social organizations of various size and scope. He refers to "disciplines and institutions " ad "middle range social organizations" where "embedding is grounded tangibly" (1992d:210).]]

[[Basic Ontological Vision]]
Social life is made up of endless chains and multiple overlapping nets, with no clear boundaries. It is long stings …. It is only a messy mesh or, rather, mush. Social reality is a terrain, a typology of networks and chains. Actors are always connected to their neighboring nodes. They are never isolated. Thus what is omnipresent, what is the peculiar feature of social life is the sociability, the connectivity, the fact of being embedded in a system of ties. Embeddedness is that main feature of social life that gives sociology its subject matter, its particular and distinct material, area and subject. This is basic insight of American tradition of interactionism and the very promise of network analysis.

"Social refers to natural networks of interrelated ties of kinship, domestic economy, neighborhood, age groups, friendship and the like. All of these … are sites as much of rational as of non-rational orientation although they lack conscious design of multi-person activity (i.e. collective action, as in formal networks)." (1986:3). "The 'social', as I narrowly construe it, accommodates persons in natural networks by recognizing familiar combinations of behavior which they embody as being roles" (1986:5). "Network, the skeleton of my social" (1986:5) refers not only to "open-ended dispersal of ties but interlocking of relationships. And this must be exfoliated with more precision and more scope" (1986:5).

The social terrain is uneven and vast, not knowable to any particular actor.

[[Complexity, Contingency and Process]]

This reality is extremely complex. Actors have only partial views. Long chains of causality are not easily traceable. Things are/appear stochastic, not because they are un-caused but because of the complexity of their causal process. Contingency comes from so many actors actually conducting life. So many tension, conflict, pressure and fragmentation.

The issue is thus, the old one: how order is possible. Not the overall order but the local orders. Discipline means, after all, "kept order". Disciplines are islands of reproducibility and thus predictability in oceans of chaos, disorder and chance.

Hence, structures are outcome of processes. Under certain circumstances, network processes can yield durable configurations. "Social structure is the key issue in theory" and "until there is a richer, deeper and more explicit framework for social structure there can be little advance in understanding process, if indeed they are different" (1967:17).

The task is thus to account how these ordered and durable organizations (molecules) emerge, how they withstand chaos, how they handle external pressures and internal tensions, how they maintain. Any social structure is best characterized as full of tension, pressure and conflict. As social organizations are messy, it is a "misleading impression of social structure as tidiness and order". "In fact, the most distinctive quality of social structure is exactly unevenness and irregularity; this unevenness reflects the essentially historical nature of social structure" (1986:10). Social structure is descriptive of (ir?)regularity and unevenness" coupled with apparent orderliness" (1986:10).

Production market is a clear example, in study of which White does not take the organization (interface) for granted) and sets out to account for it. In other words, he asks a 'naturalistic question because he sees an ordered and durable configuration. He then seeks to explain how they emerge out of production networks, and how they sustain and reproduce themselves.

[[Categorical Structure]]

The 'social' is contracted both to the psychological and the cultural. Both are construct-based apparatuses under and above the middle. All macro approaches are built on categories or constructs. Social scientists impose their categories on reality which in itself is only a messy

mesh or mush. Durkheim is still relevant since categories are constructs or ideas about reality, and appeal to them yields an ideological analysis.

Under and above the middle, there are psychological and cultural stories which define categories and constructs. These stories are inserted into the real, i.e. the social, that in the middle, the networks and chains of (direct and indirect) ties. Such stories are folk views, common-sense accounts. Much of social science stops at this level. Against this, White is concerned with the grammar, i.e. the principle of ordering employed with stories (folk views) are to be applied.

These stories are categorical just because they are kept at a general level so that they require no differentiated terrain upon which to be applied. "… (such) a folk view … must emphasize a story line which is to say the psychological and cultural aspects of the huge social terrain out there; perhaps the main reason is that this is too vast and uneven to be knowledgeable by particular person" (2).

Cultural conceptions of social structure are categorical, use averages and are final summaries. They build on constructs. As such they may be serviceable to native actors but there is very little fitting between them and actual action locale. Nor are they sensitive to actual unevenness and dispersion of actual interactions. 'Social' structure, on the other hand, focuses on real interactions, on actually on-going social life as conducted by so and so many people in such and such way.

Categorical structures are "final summaries". They tell us not much. They are after-the-fact constructions. Causality is not the correlation among variables ascribed to constructs, but refers to the generative process, i.e. the process that generate structures (regularities). It is to be located in the network process, the ties, that yields the constructs and makes them discernible due to their frequency. Categorical structures are the 'final summaries' observable to the conventional social analyst. But the task is to trace how processes have led to such regularities that we now can read off in these final summaries.

Categorical structures are 'culturally defined structures' (not socially, i.e. properly). They are clumsy and based on based on "averages". Categories or these averages are "called for by cultural glosses" (1992d:210). (explanation or interpretation of a word, like in a glossary).

(Social) terrain becomes a typology principally of networks and chains … with categories inserted only later as part of the cultural realization of a folk view" (1-2).

Existing theories are inadequate. Sociology is in need of proper accounts of social structures. 'Proper' means without appealing to constructs.

"Theory in sociology, and other social sciences, at present deals most effectively with category concepts: class, values, epochs in evolution, attitudes, locales, ages, sex. It is hard to generate models of causation in such classificatory system, however elaborate. To get at efficient causes (i.e. to do effective analysis) one must explicitly deal with concatenations of relationships in concrete social structures: networks of persons, structures of roles, and frameworks of organization (ie. Structure of positions?) …" (1967:1). Categorical structures, in other words, have to be abandoned. What is needed is instead to focus on process, i.e. to see how these final summaries come about, how they take shape.

In his doctoral dissertation, White could conclude that attitudes came out of ties. Categories and categorical partitions came out of structure of ties. Roles came from behaviors, rather than behaviors from roles (??).

"The sore point in sociological theory is 'social structure'. The main problem is to "develop substantive theory, out of which only can flow valid directives for handling data (and without which statistical tools will yield nothing valuable). The question is only one of balance in development for a field where explicit theory is weak", and until this balance is stroke, "in a filed with weak theoretical structures (statistical apparatus) will control the research" (1967:11).

[[Structural Analysis]]

White's own version is intended as an alternative to categorical mode of structural analysis,which indeed is what Durkheim calls an ideological analysis, an analysis of constructs rather than reality itself. .

True that White focuses on social organization and seek to lay bare its skeleton. But the point is that White starts with network (rather than interaction). The 'social' means simply connectivity, tie, relationship among nodes).

Normally we think of structure as a set of interrelations among units (like offices in a formal organization) which have independent and prior identities. That is, we start with units which are seen to be assigned fixed duties, functions and roles. We tend to see positions and then discern relations among them, hence the discovery or revealing of the structure (as something hidden to be unearthed!). But White suggests a different view, turning this on its head: "there is a converse view: asymmetric relations define relative roles which can be cumulated indefinitely until closure is reached at the boundaries of the organization. In this view, organizational structure is defined as the articulation of chains of cumulated roles which define the indirect role relations between each pair of men" (1964:195).

Structural Analysis

Given White's general reluctance to elaborate theoretically on such matters, we may be better off by taking as proof some other, primarily methodological, expressions and implications of his move to the middle, and probably the best piece of evidence supporting the interpretation above comes from the specific methodological strategy that White adheres to, i.e. structural mode of analysis, in his search for adequate accounts for the subject matter of his sociology. From the focus on complex social organizations follows obviously that the main task is to provide insights concerning how such particular configurations are emerged, sustained and reproduced out of the interaction among their constituent elements.

Yet, showing consistency and coherence of his sociological thinking, White restores neither to the holist nor to the atomist position for performing this task, but turns to the middle. White's advocacy of structural analysis does not, on the one hand, in any sense imply holism as holistic cultural accounts -typically drawing on role prescriptions and associated sanctions as mechanisms of conformity and continuity- are dismissed. Equally disdained are, on the

other hand, common individualistic approaches adopted within many conventional sociological currents having social organization as their focal point, namely the mode of analysis that Elias (1998:114) calls *scientific atomism* -an approach that sets to investigate a composite unit through dissecting it into its components in order to study the component parts in isolation and then to explain the distinguishing properties of the composite unit in terms of its components parts.

Rather, White's attempt to elaborate his own middle-level structural mode of investigating social organizations is characterized by a uncompromising rejection of constructs and by a persistent quest for concretization. In pursuing this objective he, in other words, turns to the concrete interaction among real people as the chief source of evidence and the main basis of explanation. Or, with social organization seen as the middle-level outcome of concrete interaction, their accounts too are to be derived from the same level. More, rather than starting with elements in isolation, his alternative directs its analytical focus on the particular configuration made up of the constituent elements, suggesting the centrality or primacy of the structure in explaining the character and behavior of the component units. Furthermore, these structures are re-conceptualized in network terms in order to give them a concrete and tangible connotation.

According to White and Leifer (1987:85), "(s)tructural analysis focuses upon the patterns of relationships among social actors. This emphasis rests on the often unspoken postulate that these relationships -independent of the content of ties- are themselves central to individual action. Moreover, structural analysis posits that the constraints associated with positions in a network of relationships are frequently more important in determining individual action than either the information or attitudes people hold. Structural context is represented by patterns of ties of varying content, and the analyst's interest is in how individual behavior serves to reproduce the structural context. This discovery of 'self-reproducing' structural contexts has occupied structural analysts in such diverse areas as kinship systems (White 1963a), organizational structures ..., world systems, ... and abstract social structures (White & Lorrain 1971). In this endeavor structures are 'explained' when their self-reproducing properties -and therefore their continued existence- are analytically understood."

There are several ideas expressed in the citation above which we can start unpacking by pointing out what perhaps can be regarded as yet another affinity between White's approach and the natural sciences, recalling the fact that in nature, unlike what the common belief suggests, atoms hardly appear in isolation but are always embedded in particular molecular structures and, being connected to each other through multiple ties, obtain their specific character depending on their location in those structures and on their relations with other atoms making up those structures. In the same fashion, White not only suggests regarding social actors as embedded in social structures rather than isolated, but also proposes that explanations of these actors' behavior should be derived from their positioning or embeddedness in those structures. Moreover, the prime aim of the analysis is to unearth the reproduction mechanisms at work, helping us obtain specified insights about exactly how these overall configurations are generated and maintained through decentralized microscopic interactions among the constituent units, a task which proves to be a real challenge especially

White's structural analysis of the subject matter, the actual social organization fleshed with concrete social life, starts with abstracting its skeleton, i.e. mapping out the structure. Yet, drawing on Nadel's criticism (1957), White finds the common conceptions of structure far inadequate as the proper analytical tool, its inadequacy coming primarily from the vagueness and all-inclusiveness of its connotation.[14] Setting out to make a remedy, White (1970a:4) points out the "basic conceptual difficulties in theories of social structure" among which is the baffling problem of even defining them. He also criticizes the common conceptions of social structure which, due to their underlying cultural holism, "have an abstract, ideological quality. Actors in role abound, but concrete persons and positions seem to belong to another, divorced, level of discourse. Balanced structures of roles are filled by actors subject to the abstract harmonies of generalized value orientations. The harmonies are so strong that most of the conceptual problems of a system of men in positions defined relative to one another disappear; at most a few actors with a very few general attributes suffice logically to people the system" (White 1970a:4).

To make a remedy for this flaw White undertakes a "general effort to systematize (his) approach to human social structure" (White & Heil 1976:26) and seeks to concretize the connotation of the concept of structure by limiting its reference to the system or network of relations among the constituent units. Structure is thus taken to denote the durable and self-

reproducing patterns of relations of varying content among the constituent units that make up the social organization in question. Far from referring to anything abstract the concept is thus taken to mean the constellation of ties that, due to its reproducibility over time, makes social organization durable and thus observable. Very much in line with White's critique of abstract constructs and with his profound empiricism, this network conception is thus employed as the proper device to concretize social structure with. It scrapes off the 'ideological' casts attached to the concept and, by the same token, renders it empirically more accessible. It specifies the content of the term and makes it a suitable object for rigorous and sharp scientific inquiry for which detailed and exact accounts can now be developed.

More, this network conception is also to be taken as the proper device that, by focusing on relations more than anything else, makes it possible to conceive, define and analyze social structure in terms purely 'social', i.e. as something that "exists concretely in a population of so many individuals related in such and such ways" (White & Lorrain 1971:50), something that takes shape and keeps being re-shaped in and through concrete tangible relations and ties among people coming and going, living and dying. As a social product, structure is thus the durable and reproducible constellation of units interrelated; it is the complex tapestry of multiple inter-unit ties which occur in characteristic bundles and which interlock and determine one another (see White & Lorrain 1971:49).

[[According to Mullins (1973:259), one of White's early students, "structuralists … give logical and analytical priority to a whole over its part, emphasizing the complex web of relationships (e.g. a social network) that link and unite those elements. The complex web maybe quite extended and weak (e.g. the communication network among friends); yet stronger relations (e.g. marriage choice) can be constructed from it. Furthermore he (1973:256-7) maintains: "The fundamental structuralist perspective is that social structures show at least two levels of structural regularity: a surface, obvious level known to the structure's participants (e.g. the table of organization to those listed in it) and a non-obvious 'deep' level produced in certain fundamental behaviors and limited by the nature of those behaviors (e.g. networks formed in an organization by those who talk to one another regularly –these communication systems are limited in size by the requirement of regular conversation). … The fundamental metaphor for the structuralists is formal grammar, in particular the analysis of that grammar by Noam Chomsky. … [Whereas] structural functionalists [i.e.

Parsons] tried to explain various aspects of social systems in terms of the motives (usually shared values) and perceptions of persons sharing certain attributes, the structuralist studies patterns of fundamental behaviors (e.g. regular conversation between two persons; the giving of food by one person to another). Behavior within a network of relations and behaviors is a component of structure and joins with other behaviors to form the deep structure is a social system. For example, scientists talk with and train other scientists; 'talking' and 'training' are fundamental behaviors … Fundamental behaviors parallel morphemes in linguistics; similarly, the status and role construction tasks in structuralism parallel the sentence construction task in linguistics. The ways in which status roles articulate into structural systems of roles parallel synatx. Structuralists interpret the relationship(s) of unit behaviors to one another as providing an explanation for behavior within specific social systems. Chomsky has been particularly important for this conception of the 'deep structure' of language and analysis through rules by which all the grammatical sentences in a given language –and only these- can be generated."]]

It goes without saying that this identification of social structure with the system of relations among units is fused with a marginal or downplayed role for culture as an explanatory factor, a characteristic feature of White's sociology, that can be understood both an expression and an implication of the move to the middle and the emphasis on the social, when taken far enough. Probably also as a reaction against the powerful prevailing Parsonian cultural determinism, White frequently points to the explanatory inadequacy of culture and accords it, one the whole, a very peripheral place, even though there is significant change in this regard in his more recent works.[15]

There are, however, a number of cases where White explicitly discards the 'cultural' contrasted with the 'social' as the proper mode of analysis. An early evidence is to be found in White & Lorrain (1971:50) where the authors, discussing the consequences of focusing the analysis on concrete interactions, write: "(a)nother consequence is that cultural systems of cognitive orientations, or of values, or of norms however complex and however crucial, can only constitute a small part of the social phenomenon. Although some global structural aspects may be culturally recognized and be expressed in strong and important social norms, this is not necessarily so for all such aspects. It is exceedingly important to realize that, as soon as an abstract cultural framework is inscribed within a set of concrete persons, coming

and going, being born and dying, wholly unanticipated consequences may result. Thus when we speak of the global network structure of a social system, we have in mind the overall objective logic of this system as it exists concretely in a population of so many individuals related in such and such ways."

What White dismisses is, in other words, the old mechanic conceptions of culture, as formulated by Parsons for instance, that often tend to imply a coherent fixed patterns and rules of perception and conduct, handed down from generation to generation and imprinted in the head of every single individual belonging to the cultural group. With actors treated as merely passive products of successful socialization processes, these conceptions also incline to give rise to holist explanations which, in accounting for social phenomena, typically draw on an artillery of prescribed and pre-fixed norms and standards that inescapably govern behavior, leaving thus no explanatory room for 'the social' as a generative process of agency.[16]

["White's concern in (this) book was stated first by Levi-Strauss (1949), then given mathematical form by Weil (1949), extended by Bush (1953), and subsequently restated by Kemeney, Snell, and Thompson (1957) in their *Introduction to Finite Mathematics*: Are some kinds of kinship structures amenable to description in terms of formal relations such that the phenomenon of kinship is necessarily implied by the relations among groups? Anthropology largely ignored White's book, and the reviewer in the *American Anthropologist* (Kennard, 1964) remarked that he might be the only one in the United States with sufficient mathematics to review the book" (Mullins 1973:252-3). This is an expression of focus on the social and downplay of the culture, and also the reason why anthropologists ignored the book, not entirely because of the mathematical character of the book.]

To make another related remark, this identification of social structure with the system of relations also represents one of White's most influential contributions, as its widespread usage in American sociology today clearly demonstrates. This network conception of structure, and the associated and much popular notion of embeddedness, mark however only an early stage in White's sociological thinking, still pretty much within conventional sociology and preserving largely a substantialist character. As we shall see below, to the degree White distances himself from conventional social network analysis and moves towards

more sophisticated phenomenological theories, his notion of social structure too receives theoretical refinement. Before embarking on this issue however we still have to bring into focus some other general traits functioning as integrative elements across White's production, namely the concepts of process, contingency and complexity.

Process, Contingency and Complexity

Social universe is, of course, not static but dynamic, ever changing, evolving and unfolding. Like the natural world, it is a restless universe, always in motion. Nor is it entirely ordered. On the contrary, contingency or chance is indeed an indispensable element of human existence, holding "an awful grip" (White 1990b:783) on all social life, as unexpected break-ups of the routinized daily normality, cracks and fractures of everyday life, constantly remind us.[17] Parallel to the way the natural world is depicted in modern physics, White seems to conceive the social world as one that not only is restless but also chaotic, and this is a pair of attributes that influence significantly his description of social organizations, seen largely as complex open systems whose orderliness is constantly hazarded by stochastic processes faring through it. Consequently, as the site of hazardous and unpredictable interplay of stability and change, of order and happenstance, social organization is "messy and refractory" (White 1992a:4); it is "a shamble rather than a tiny crystal" (White 1992a:22), and even though it is where interaction process has come into some accommodation, showing some observable regularity, social organization is not the dead-end of social dynamics.

This dual character of social life calls for a dual approach, and in White's production there are many expressions of his ambition to deal with this duality. Though initially White is more concerned with developing an appropriate approach to social structures, he is nonetheless fully aware of the insufficiency of any one-sided focus on structures and, parallel to his sustained interest in these structures, there is in his work to be found also a persistent occupation with social processes. Realizing the necessity of this task, from the very start the terms structure and process often appear jointly in his work, indicating the need to take due attention to both aspects of social organizations. Already in his doctoral dissertation, for instance, White (1960:ii) declares that "(t)he purpose of (his) dissertation is to extend empirical knowledge about structure and process in the upper echelons of administrative organizations." More, as his numerous works on social mobility demonstrates, White from early years also seeks to develop a number of analytical tools making possible a more

thorough analysis of social processes, just as he elaborates devices like structural equivalence and block-models to venture more deeply into social structures.

Indicating the dynamic character of structural contexts, however, social processes are nearly always conceived as erratic network flows which give rise to and set in motion long and devious effect chains, faring through the structures from one node to another. More, it is also a network conception that underpins his attempt to meet the need of "integrating ideas about structure with ideas about process in social theory" (White 1973a:43). Through years White has devoted an enormous amount of work to the study of these processes and, in accordance with his scientific disposition, much of this work has been aimed at developing analytical tools to help us gain specific insights about exactly how these stochastic processes unfold within structural contexts, how exactly their effects are at the microscopic level and exactly how these effects chain together and produce results at structural level. All this is exemplified in his work on social mobility, a central process in modern society, particularly in the development of the vacancy chains model, "the core idea behind" which has been to help us "trace social processes at a microscopic level of social structure to obtain valid causal theory" (White 1970a:328).

As mentioned above, there is also a given place for chance and contingency in White's sociology and he, from the very start, considers it as an important factor that should be recognized and included in account for social organizations within various contexts. After having developed several ideal types of kinship systems in *Anatomy of Kinship* he (1963a:149) points out the major incompleteness of his approach by holding that "(c)hance mechanisms probably must be included in a more general framework: to provide a basis for measuring mixtures of ideal systems; to allow for individual deviations from any of the recognized norms not corrected by such mechanisms as adoption; and to provide a basis for assessing the demographic stability of a given ideal system or mixture of systems. Once such a framework is developed one can hope to test meaningful theories, presumably of a stochastic nature, of the evolution of classificatory kinship systems". Moreover, in *Chains of Opportunity* White (1970a:328) motivates the use of vacancy chain models instead of usual career models by saying that what is distinctive about these models are "the particular combination of (the three) principles (duality, causality, and equilibrium) into the principle of contingency". And commenting on the possibility of stochastic interpretations of Coleman's

model of 'movement among attributes' (Coleman 1964), White (1970d:853, note 5) holds that such "(s)tochastic interpretation provides a natural framework for assessing deviations between predicted and observed averages. It is hard, in any case, to conceive of behavior in a small group as having no chance components". Finally, reviewing Coleman's *Foundation of Social Theory* (1990), White (1990b:783) continues to criticize Coleman for his Parsonian obsession with order and control and for his "shrugging off the awful grip of chance and the arbitrary on human affairs in this massive tome (i.e. *Foundation of Social Theory*, where) evil has no place."

This introduction of chance as an important explanatory factor does not however imply the absence of causality but rather refers to what Collins (1984:333) calls the *unconnectedness of different causal orders in the universe.*[18] What it means, in other words, is the complex and unpredictable interplay of multiple causal sequences, endless chains or strings of causality at micro level, crossing each other and cutting across various realms and levels, spilling over from one to another. Expressed by White (1962:155) himself, "the probability of events of a given type … seem random as a class because the microscopic forces which actually determine them when the system is described in overwhelming detail are varied and uncorrelated. This interpretation … can lead to complexities in the models, however, and must be handled with great care … " It is exploration of this complex interplay, i.e. tracing how these lines of causality interact and cumulated in endless combinations and yield unforeseen macro effects, that lies at the heart of any explanation. It is such processes of causal interaction and congestion which, always stochastic, give rise to the indeterminacy, unpredictability and uncontrollability of social life, breaking down any designed order. As contingencies "chain together to override planned social life" (White 1992a:xiv), one should not see only orders and contexts, i.e. planned systems and/or structures which are theoretically perfect like in bureaucratic organizations, but also contingencies and improvisations, even though much in our everyday social surrounding, that contrasting with our immediate experiences of improvisations and perceived chaos, asserts normality and regularity, which is at odds. We "live in a world where disorder is around every corner and improvisation is the only means of survival" (White 1992a:3).

At a philosophical level, this introduction of chance suggests a recognition of the vulnerability of human order, reflecting perhaps more recent scientific insights about the

natural world. At the sociological level, however, it underpins a critical position towards the social determinism, stemming from either consensual or authoritarian value establishments. Recognition and inclusion of contingency in sociological analysis is, in other words, to negate any presupposed orderliness which, originating from power or cultural structure centers, bestows lucidity, regularity and logic upon social life and makes it appear as a pre-determined play in which actors take on their roles and follow the manuscript mountainously. It undermines the typical obsession with order and control that, induced by the quest for a more manageable object of study, misleads much of sociology to distort its subject matter and to eliminate from its agenda the spontaneous and the haphazard. It is against this background that White (1990b:783-4), for instance, holds responsible Coleman's "disdain of uncertainty and obsession with control", "both tied to rationality", for crucial omissions. It is also against this background that White (1992a:4) advocates a dual approach and urges social scientists to "seek principles of social process which account for chaos and normality together". Further, it is also against this background that White, considering both "normality and happenstance as "opposite sides of the same coin of social action"(1992a:4), implies that he has pursued elaboration of such a dual approach for decades and that his "work and thoughts ... (has) never left the two themes of contingency and context" (1992a:xiv).

True, the enormously dense texture of causal interconnectedness, the bewildering complexity of the interplay of causal interaction and congestion, often make social life appear to common sense as a chaotic, infinite and haphazard sequence in which actions and events from unrelated segments of social world weave together in complex patterns and produce unpredictable and unintended effects. Or, the various worlds we live in and near do "seem erratic and often pointless", and this is an impression which understandably is derived from the factual "enormously complexity of interplay among different lives, the fascinating unpredictability of how different actions, perhaps of millions of persons, cumulate into chains of unintended consequences" (White 1972:1). Yet, sociology can help us make sense of this complexity. Moreover, not only it is possible for sociology to demonstrate that, contrary to the common sensual impression, social reality can be made intelligible, it is also the very task of sociology, its "central idea" (White 1972:1). As White (1972:1) puts it, sociology "can take (our) puzzlement ... and move it into the center of (our) attention, show (us) how to take a grip on thinking in an organized way about the social worlds around (us)." To do this, as we have already pointed out, we should start with fostering a genuine and "decent respect for this

complexity and for the difficulty in comprehending it" (White 1972:4) -a respect that "should lead us abjure any easy explanation and point instead to a sophisticated gestalt of influence ... how congeries of social forces are joined in these complex patterns, and grant this complex pattern its due measure of autonomy."

For the theoretical implications of relational mode of thought se Emirbayer (291-):
A different conception of self (Goffman), of network and social structure (298-), of agency, and of basic picture of social reality.

Phenomenology
Obviously, the attempt to develop a full-fledged phenomenological approach to social reality and the explicit advocacy of such an approach are both very recent in White's sociology. More, they may also appear as marks of a discontinuity in his sociological thinking. In fact, given the character of White's earlier work, one can hardly resist the impression that his sociology is of the kind with the greatest possible distance from any interpretative sociological tradition, without any apparent potential or prospect of developing in that direction. And yet, the argument of this paper is that White's adoption of and adherence to phenomenology are the outcomes of a process of gradual crystallization, i.e. consolidation and clarification, in his mode of conceiving social reality. In different words, what is argued here is that whereas White's perception of the social reality has, no doubt, altered radically in many regards, there is nonetheless also a fundamental continuity to be discerned in his sociological thinking, a continuity that primarily is due to his firm and stable positioning in the middle.

As we recall, more than just 'coming up from the desk, looking down and getting dusty', White's consistent empiricism and his persistent quest for concretization lead him move away from metaphysical constructs, turning to the middle level of analysis. It is, as mentioned before, at this level, the level of concrete interaction, that White focuses his search for a new foundation. As an early sign of this move, White's interest for complex social organization indicates how he from the very beginning directs his analysis to the middle even when the move is not yet quite articulated. The same is true for the other old and stable feature of his sociology, namely, his pertinent adherence to structural mode of analysis. Encompassing both structure and process, social organizations are regarded as dynamic social crystals that, as the

main object of theorizing, are to be explained by unearthing the underlying overall structures of them and by imparting exactly how these configurations are shaped, sustained and reproduced.

Though this basic framework has uninterruptedly continued to underpin much of White's sociology, with time however his vision of social reality has grown subtler and, absorbing some of the basic insights of social constructivism, shows a considerably higher degree of theoretical sophistication. White's intellectual development not only involves incorporation of these insights into the earlier framework, but also a recasting of many old notions anew, in the light of these fresh insights. As we proceed, it becomes clear how ideas like interaction, social tie, role network, structural constraint and many others, so characteristic for his sociology, are re-thought and re-defined in phenomenological terms. One could discern, in other words, a total project of long and gradual theoretical modification and re-construction, yielding an original phenomenological synthesis that still bears fundamental similarities with the old one and, in many substantial ways, is its continuation. At any rate, since White himself typically offers no clear and systematic account we are, again, left to our own devices in tracing this development.

The history of phenomenological inclination in White's sociology goes indeed back to his very first sociological work, *Sleep: A Sociological Interpretation,* originally published in *Acta Sociologica* (1959), and later in a book called *The Hidden Society* (1965) edited by Wilhelm Aubert who was also the co-author of the article. Offering a first clue, Aubert (1965:3) declares in the *Introduction* of this book that, though the essays included "lack reference to an explicit methodology", the approach of the whole book "is 'phenomenological' in the sense that social structures are described primarily through their counterparts in the inner world of cognition and perception". He, nonetheless, almost immediately emphasizes "the revealing aspect of social analysis", i.e. disclosure of the objective structures which, though invisible to the actors themselves, constitute the very conditions that make possible their social behavior as well as their perception of them. Referring to these concealed parts of the social world, Aubert (1965:4) writes "it is always a task of sociology to reveal the hidden society to its members. In so far, however, as sociological efforts address themselves to the phenomenology of the private world of social perceptions and cognitions, the revealing aspect of social analysis becomes more predominant."

In this article, however, Aubert and White first give an overview concerning various conceptions of sleep across culturally different settings, followed by an attempt to demonstrate how this phenomenon, despite its private appearance, is indeed socially designed, i.e. they seek to show how sleep is a "social event" (Aubert & White 1959:2) and how sleep behaviors are conditioned and patterned due to the underlying structures which stem from the surplus of meaning associated with this activity. Though essentially resembling Durkheim's treatment of suicide, the authors nonetheless set here to explore the 'counterparts' of these objective structures in the actors' 'inner world of cognition and perception', i.e. in their immediate unreflective experience, demonstrating thus the very first signs of what Bourdieu (1977:5) calls "a 'phenomenological' desire to restore the subjective experience of the practice".

To take another example of White's concern with the relation between objective structures and actors' perceptions of them, we can mention a passage from his doctoral dissertation written at almost the same time. After having mapped out the global structure of relations among managers in a medium-sized American company, he (1960:16) holds that "we do not assume that the perceptions, by a given manager, of interaction and activity patterns or, say, the simple averages of the perceptions of all managers, are accurate reflections of the patterns which would be noted by an omniscient observer. We do assume that a manager's own behavior is determined by his set of perceptions, as brought to his conscious attention, in part by cues from the actions of others. We do assert that from contrasting the perceptions of different managers one can in principle infer both their attitudes toward their relations and much of the actual (i.e. the overall objective) pattern of relation itself."

Apart from such early rudiments, however, in one sense there has always been a tangible phenomenological bent in White's work induced by his critical stance towards abstract theorizing and his advocacy of empirical research designed to venture into the micro space of the immediate experience, perception and comprehension of the real people who, having only a partial view of the overall social structures, unintentionally help reproduce these structures. A clear example of this is to be found in White's model of production markets, a model that according to him (1999c:2) "captures the phenomenology of real markets far more accurately than the assumption of anonymous actors and their cogitations found in standard economic

theory"; and it does so because this model, rather than starting with the abstraction that views producers as an anonymous and infinite mass of "speculative virtuosos", deals with a limited number of concrete producing firms led by businessmen who, having partial views and accounts, "are attuned to tangible evidence from their own specific market as to what volume and value are permitted in their niche among the specific set of producers" (White 1981b:6).

To grip a better hold of White's phenomenology, and its particularity, we must now resume some of the topics we discussed above and continue from where we left them. Here we may recall White's emphasis on interaction, the association among human beings, seen as an intrinsic and indispensable feature of all forms of social life. We may also recall his sustained concern with social organization as a reflection induced by the conviction that it is at the middle level, the level of concrete interaction among real people, that sociology is to look for its true foundation, for the proper raw material of its analysis and for the solid basis of its explanation. With this in mind, we may now turn to what is probably one of the most crucial premises of White's phenomenological inclination, namely, the adoption of the notion of 'the social' understood as an emergent, relational and socially constituted kind of reality that emerges out of the concrete and tangible social interaction.

In his more recent works, White's move to the middle has, in other words, become also fused with the endorsement of a particular conception of 'the social' which embraces and expresses an elaboration and concretization of, rather than a break with, his previous emphasis on interaction process, now taken in a phenomenological direction. Put in yet different words, it is the persistence and consistency of his move to the middle and his willingness to take account of its implications that induce him to take a step further now and adhere explicitly to the idea that out of human interaction emerges a different or, rather, a distinct, *sui generis* kind of reality of its own nature. In White's phenomenological sense, 'the social' thus denotes the constructed reality that emerges through interaction process, which is now seen as a constructive interaction or, more exactly, as mutually constructive social action that by definition is always meaningful and oriented towards others.[19] It is this phenomenological conception of the social reality that White has in mind when he (1997a:62-3) points at the "interactive social constructions of reality among us" as the "the central phenomenon of social action."

This is however a basic tenet which, perhaps tacitly lying in White's work for a long time, finds an explicit expression only recently, in *Can Mathematics Be Social? Flexible Representations for Interaction Process and Its Sociocultural Constructions* from 1997, where White, showing the boldness and confidence of his intellectual maturity, asserts that *"(t)he nub of being social is inducing a new reality, a social reality as to level/arena//space-time that is constructed through and in interaction*. That is the central phenomenon and the prime target of mathematical aid. This construction first happened hundreds of millennia ago with the first tribes of humans. This construction of the social can be seen as analogous to the new level of reality induced billions of years earlier with the emergence of life among soups of macro-molecules" (1997a:54, original italics).

With this single passage White apparently links his approach to a whole sociological tradition, especially the heritage of Durkheim for whom sociology, in order to justify its existence as a distinct discipline, has to have a subject matter distinct from that which is the focus of inquiry for other sciences[20]. In accordance with this tradition, White defines as the focal object of sociology 'the social', understood as a peculiar category of phenomena which can not simply be reduced or assimilated to other forms of being. It is a distinct kind of phenomena belonging to a certain order, with some intrinsic properties which merit being called social[21]. As such, 'the social' is thus an emergent kind of reality that arises from the basic feature of social life, namely, association among human beings. It is a certain kind of being that emerges from the interactive process, from the togetherness of men. It emerges out of the association of them and is born in ties among them, as the product of binary operations. It gets generated in the association of individual consciousness or, as phrased by Durkheim (1982:144), "it arises from that special process of elaboration which individual consciousness undergoes through their association with each other and whence evolves a new form of existence."

Central as it is in White's later sociology, this notion however must be explored more carefully if we are to see clearly the peculiar, phenomenological way in which he articulates it and to grasp its various implications. For this we now need to turn to a very fundamental characteristic of White's later sociological thinking, namely, the relational mode of thought that underlies both his adherence to, and his idiosyncratic interpretation of 'the social'. Underneath the adoption of this notion of emergent reality there is, in other words, in White's

later approach an unspoken break with the substantialist mode of thought which, due to its flat and undifferentiated ontology, recognizes only one kind of reality, namely, the physical, the one immediately available to our senses. This mode is, as Bourdieu (1989:15) puts it, "characterized by the inclination to recognize no reality other than those that are available to direct intuition in ordinary experience." Unproblematically in accordance with common sense, the basic premise of substantialism is the primacy of the substance, that is, the idea that units have an self-contained, discrete, and fixed existence independently of, and prior to, the relations in which they involve. In other words, this mode of thought posits that "it is entities that come first and relations among them only subsequently" (Emribayer 1997:281).

In sharp contrast with this common view, the relational mode of thought is a fundamentally different way of conceiving social reality which, originating in the intellectual heritage of Gaston Bachelard and Ernst Cassirer, is characterized by refusing to take as a given and unproblematic point of departure self-subsistent, pre-made and fixed entities, such as persons, which come "performed", i.e. fully accomplished prior to their entry into social relations. Rather, it conceives social reality primarily in "dynamic, continuous, and processual terms" (Emirbayer 1997:281). Both the rejection of the fixity of units and the pertinent processual outlook derive from the notion of the *reality of relations* adopted by this mode of thought, a mode of though that, according to Bourdieu (1989:15) "identifies the real not with substance but with relations, those very relations which constitute a space of positions external to each other and defined by their approximation to, neighborhood with, or distance from, each other."

Yet, the relational mode of thought not only recognizes the reality of the relation but also ascribes it ontological primacy -a basic tenet phrased best by Bachelard himself saying: "in the beginning is the relation" (Bachelard 1929:65, quoted in Vadenberghe 1999:43). Relational mode of thought is, with a different phrasing, the perspective of relation, of interaction or, more exactly, of transaction -a perspective in which units are conceived as inseparable and detachable from their transactional contexts, a perspective in which "the very terms or units involved in a transaction derive their meaning, significance, and identity from the (changing) functional roles they play within the transaction. Things are not assumed an independent existence present anterior to any relation, but ... gain their whole being ... first in

and with the relations which are predicated of them" (Emirbayer 1997:287 quoting Cassirer 1953:36).[22]

Even if explicit statements on this issue are few or non-existent in the whole bulk of White's production, there are strong indications suggesting that he nonetheless in his later work adopts a relational mode of thought, even though largely in a tacit fashion. This impression is of course confirmed by Emirbayer who regards White, along with Norbert Elias and Pierre Bourdieu, as a relationalist social scientist. Some other indirect support may also be provided from the compatibility of these notions with modern physics in which White was originally trained. To start with the idea of an emergent social reality, it can be asserted that, though different in nature, this peculiar and counter-intuitive kind of reality is by no means less real or natural than the more familiar physical one, and there is nothing metaphysical about it. On the contrary, as Durkheim's famous metaphor reminds us, it is natural scientific analogies that, by providing both inspiration and justification, seem to have made at least plausible to social scientists the idea of a distinct emergent social reality yielded in conjunctions and transactions among people. Nor does relational mode of though represent anything metaphysical. In fact, as Emirbayer (1997:287) and Bourdieu (1989:15) point out, the relational mode of thought is actually an established way of conceiving reality in modern mathematics, physics and natural sciences, and Bachelard and Cassirer, both influential figures in relationalism, do indeed represent a more general methodological current seeking to "systematically transpose the relational conception of natural science to the social sciences" Vadenberghe (1999:32-3).

More direct evidence is, however, provided in White's own work, especially in the more recent ones where he in an increasingly explicit fashion demonstrates his adoption of, and elaboration of, a relational mode of thought. We have already mentioned White's adherence to the notion of 'the social' as one of the most crucial premises of his phenomenological inclination. It is indeed the adoption of the relational mode of thought that, by providing an epistemological justification, makes this adherence possible. It is, in other words, by according an ontological primacy to relation that it becomes possible to conceive of interaction as a generative process, i.e. as a process in which involving entities not only bump to each other as billiard bolls but also participate in the common act of constructing the social reality of which they themselves are parts.

However, adoption of the relational mode of thought and its implications regarding the primacy of the relation and the emergent nature of social actors as well as the liability of this mode of thought to host a phenomenological inclination become much more concrete and clear in White's critique of the approach known as the social network analysis, and in his own recently elaborated phenomenological version of it. Constituting the very foundation of his general sociology, this particular conception of social networks is, in other words, both the main concrete outcome as well as the chief site of expression of the phenomenological enrichment and refinement of White's later approach to social reality. On the other hand, it is the insights obtained through empirically venturing into and theoretically reflecting upon concrete social networks that seem to have sustained the phenomenological development of White's approach. Being the key to White's later sociological thinking, exploration of this original conception of social networks requires a separate full-scale study in its own right, a task to which a separate paper shall be devoted. Here however we may point out only briefly some preliminary observations indicating how White's phenomenological development comes to a concrete expression in his particular novel network conception that underlies his more recent vision of social organization and its underlying structure.

Whereas White himself has been a pioneer in the development of the social network tradition, he does not constrain himself in criticizing it for having turned into a mechanistic mode of analysis, sharing the same guilt of the rest of contemporary social sciences, i.e. building on constructs. At the most basic level, substantial expressions of White's phenomenological development may be observed in his constructivistic interpretation of the notion of social tie, i.e. the tangible and concrete outcome of more durable social interactions, which White gradually has come to conceive as the bedrock or the basic element to build his general social theory on. For White, conventional social network approach conceives of relations as ossified canals which remain the same once they are established, pretty much like solid bridges via which various kinds of resources are transported forth and back in discrete packages, from one node to another, never really allowing these flows to transform anything but the distribution of the resources in question.

With time White increasingly distances himself from this mechanic and static conception of social tie as a solid link, i.e. as something that either exists or not and that, if existing, is

considered to remain more or less the same once it is established until it ceases to exist. For him a social tie is instead a dynamic phenomenological reality that emerges out of the interaction process among real people. It is the concrete result of the sociability of men and the unique product of the association among them. Despite its apparent simplicity, a pair-tie is no less than an achievement, "an accomplishment" (White 1992a:68) to be maintained actively and continuously by the nodes involved. Social tie is, in other words, the very concrete shape that 'the social' -this distinct, emergent and relational kind of reality- takes. As such, social tie is a constructed kind of reality. It is a kind of reality that is constructed jointly and is sustained mutually through the common perceptions and acts of those engaged. A tie is, in a nutshell, a joint accomplishment.

More, due to the common mechanical view of social tie, conventional approaches to social networks largely tend, in White's view, to start with the mythical conception of nodes as pre-existing, pre-made entities which come "performed", to paraphrase Emirbayer. They are assumed, in other words, an accomplished existence independent from the relations into which they enter only subsequently. In contrast, adoption of a relational mode of thought makes it possible for White to take further the very basic premise of network perspective, i.e. the primacy of the interdependence of nodes, and conceive nodes not as units to start with but as final products which become, and keep becoming, what they are only in capacity of being positioned in particular social contexts, the ever unfolding, multi-layered textures of multiple ties. And it is against this background that we can begin to understand the notion of identity -a notion which appears to be essentially a phenomenological interpretation of the concept of role.

Occupying White already in the early years of his sociological career, the concept of role appears for the first time in *Sleep: A Sociological Interpretation* (1959:4), where it is used in accordance with its conventional connotation, even though already here a phenomenological inclination can be discerned in his attempt to explore and reconstruct incumbent's perception and experience of the role. Later, in his seminal articles on social structures from 1971 and 1976, White, together with his students Lorrain, Boorman and Breiger, elaborates a network conception of role defined in terms of the set of relations any given node has to its neighboring nodes, and in terms of its location in the overall structure, as in blocks or structurally equivalent positions.

Reflecting once again White's move to the middle, this network conception of role already marks a major step away from the conventional sterile holistic approaches in which roles are typically inferred from abstract cultural schemes or reified structures. It demonstrates also a major step away from the contextual insensitivity of atomist accounts which accord social actors a universal per-made set of subjectivities as given faculties, propensities and attributes. Rather, due to his healthy emphasis on the middle level, White quite early seeks to articulate the conception of role socially and to account for it as socially derived, i.e. as the outcome, molded, defined and upheld in social interactions among nodes.

As the concrete leverage of the adoption of the relational mode of thought, identity is seen by White as a social outcome, a product generated in and through social ties. Identity, personal or otherwise, is conceived as a social construction that emerges out of the joint efforts of the nodes bound together through various ties. More concretely, identities are self-images or self-presentations thrown together and launched in order to be approved, confirmed and established socially. Situated in a number of distinct networks, any social actor issues an identity which, being a composed complex organization, embraces and unites the partial and more or less compatible self-images that the actor evolves due to his positions in distinct networks. As a multi-selved unit, it is held together by "a set of smooth social stories shared with others" (White 1992a:3) i.e. accounts or representations which normally, due to attempts made at retaining self-similarity, succeed in presenting it as a firm, solid, stable and unified entity, concealing efficiently its inherent changeability, slipperiness, fluidity, tension, contradiction, incompatibility and incoherence. Thus issued, an identity is, however, neither achieved once and for all, nor is it the outcome of a solo project or a self-action, as Emirbayer would probably phrase it, carried on in a social vacuum. Rather, as White (1992a:7-8) puts it, "(h)aving an identity requires continually reproducing a consistent joint construction out of actions from distinct settings". Identity, in other words, is to be molded, and keeps being molded, jointly due to complex interactions based on and derived from mutual perceptions and mappings.

Postponing a full treatment of identity, one of the two "primitives" of White's general sociology, to another paper, we may here just mention that it is in this spirit that White proposes to develop a new theory of individuals as persons, and other social actors. Perhaps

suggesting a shift in sociology from substantial to relational mode of thought, a shift parallel to that from solid state to quantum physics, he points at the up-dated version of knot theory as a model and holds that "(y)ou can already see why I conjecture that knot theory may become central in the future for modeling social phenomena in the currently emerging era of social constructionism. Interactions, ties in sociocultural context, are coming to supplant persons as building blocks -and a person may come to be seen as a knotted vortex among social networks" (1997a:64). He then goes on and maintains that "(i)t is not just persons that emerge as actors from knot theories of space-times. Consider, for example, the kaleidoscope of networks and corporate in conflict and oscillation as they continually reconstruct the Ottoman Empire as portrayed by Barkey (1993), or in the Medici Florence portrayed by Padgett and Ansell (1993). And there are a number of other theoretical-modeling enterprises moving in this direction, some catalyzed by the Santa Fe Institute" (1997a:64).

Nothing gets constructed without constructing powers however. In White's idiosyncratic conception of social networks, identities are being molded and re-molded due to network energies or pressures ceaselessly issued, exercised and mediated through ties. Probably with various kinds and degrees of affections, commitments, and dependencies as sources, these shaping forces of the networks stem from a desire of social actors for normality, i.e. for stability and predictability. Exercised through complex role-maintenance mechanisms such as interlocked choices, these forces take the concrete form of control attempts. As such, these control efforts are constituent parts and parcels of any identity or, in White's words, an identity "keeps getting thrown together out of overlapping efforts of many at control" (1992a:xi), indicating thus the centrality of control, the other "primitive" of his general sociology.

A Final Note

As we have tried to demonstrate, one of the fundamental features in White's approach to social reality is a move to the middle. In what has been put forth we have sought to show both the fecundity and the centrality of this middle ground positioning. We have also tried to explore its various aspects and expressions as well as its diverse implications, both methodological and ontological, both in White's earlier sociology and in his later approach. To repeat what was said earlier, without observing this move, it appears hardly possible to discern and assess any consistency across White's production. Nor would it be easy to follow

the development of his sociological thinking over time, especially his gradual adoption of a phenomenological mode of approaching social reality. There is much to be done, however, and this examination is by no means complete. On the contrary, it should be seen only as an initial exploratory investigation into a virgin territory and its results are to be considered as nothing but highly tentative suggestions.

References

Aubert, Vilhelm (ed.) 1965 *The Hidden Society* Totowa, N. J.: The Bedminister Press

Bachelard, Gaston 1929 *The New Scientific Spirit* Boston: Beacon Press

Barkey, Karen 1993 *Bandits and Bureaucrats* Ithaca, N.Y.: Cornell University Press

Bhashar, Roy 1989 (1979) *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Sciences* New York: Harvester Wheatsheaf

Born, Max 1951 *The Restless Universe* New York: Dover Publications

Bourdieu Pierre 1977 *Outline of a Theory of Practice* Cambridge: Cambridge University Press

--1989 "Social Space and Symbolic Power" *Sociological Theory* 7:14-24

Cassirer, Ernst 1953 *Substance and Function: Einstein's Theory of Relativity* New York: Dover

Coleman, James S. 1964 *Introduction to Mathematical Sociology* New York: Free Press

-- 1990 *Foundations of Social Theory* Cambridge, MA: Harvard University Press

Collins, Randall 1984 "Statistics versus Words" pp. 329-362 in *Sociological Theory 1984* edited by Randall Collins, San Francisco: Jossey-Bass Publishers

Durkheim, Emil 1982 (1895) *The Rules of Sociological Method and Selected Texts on Sociology and Its Method* London: Macmillan

Elias, Norbert 1998 *On Civilisation, Power and Knowledge: Selected Writings* Chicago: The University of Chicago Press

Emirbayer, Mustafa 1997 "Manifesto for a Relational Sociology" *American Journal of Sociology* 103:281-317

Giddens, Anthony 1984 *The Constitution of Society* Cambridge: Polity Press

Johnson, Jeffrey C. 1994 "Anthropological Contributions to the Study of Social Networks: A Review" pp. 113-151 in *Advances in Social Network Analysis: Research in the Social and Behavioral Sciences* edited by Stanley Wasserman, & Joseph Galaskiewicz, London: Sage

Kron, Gabriel 1939 *Tensor Analysis of Networks* New York: John Willey & Sons

Lane, Michael (ed.) 1970 *Structuralism: A Reader* London: Cape

LeCorbeiller, P. 1950 *Matrix Analysis of Networks* Cambridge, MA: Harvard University Press

Mannheim, Karl 1936 *Ideology and Utopia: An Introduction to the Sociology of Knowledge* London: Routledge & Kegan Paul

Marwick, Arthur 1989 (1970) *The Nature of History* London: Macmillan

Merton, Robert K. 1963 *Social Theory and Social Structure* The Free Press of Glencoe

Nadel, Siegfried Frederick 1957 *The Theory of Social Structure* Glencoe, Ill: Free Press

Padgett, John F. & Christopher Ansell 1993 "Robust Action and the Rise of the Medici, 1400-1434" *American Journal of Sociology* 98:1259-1319

Radcliffe-Brown, Alfred Reginald 1952 *Structure and Function in Primitive Society* London : Cohen & West
Slepian, P. A. 1968 *Mathematical Foundations of Network Analysis* New York: Springer

Swedberg, Richard 1999 *Orientation to Others and Social Mechanism* A paper presented at Stockholm Seminars on Social Mechanism

Vadenberghe, Frederic 1999 "'The Real is Relational': An Epistemological Analysis of Pierre Bourdieu's Generative Structuralism" *Sociological Theory* 17:32-64

Harrison White's Works Referred to

-- 1952 "Superlattice Stability" *Quarterly Progress Report: Solid State Molecular Theory Group*, Massachusetts Institute of Technology, July 15

-- 1958 "Atomic Force Constants of Copper from Feynman's Theorem" *Physical Review* 112:1092-1105

-- 1958 (with Lee S. Christie) "Queuing with Pre-emptive Priorities or with Breakdown" *Operations Research* 6:79-95

-- 1959 (with Vilhelm Aubert) "Sleep: A Sociological Interpretation" *Acta Sociologica* 4:1-16 & 46-54

-- 1960 *Research and Development as a Pattern in Industrial Management: A Case Study in Institutionalisation and Uncertainty* Doctoral Dissertation, Princeton University

-- 1962 "Chance Models of Systems of Casual Groups" *Sociometry* 25:153-172

-- 1963 *An Anatomy of Kinship: Mathematical Models for Structures of Cumulated Roles* Englewood Cliffs, N. J.: Prentice-Hall

-- 1964 "The Cumulation of Roles into Homogeneous Structures" pp. 195-211 in *New Perspectives in Organisation Research* edited by William W. Cooper & H. J. Leavitt & M. W. Shelly II, New York: John Wiley & Sons

-- 1964 (with Cynthia A. White) "Institutional Changes in the French Painting World" Chapter 9, pp. 253-269 in *The Arts in Society* edited by Robert N. Wilson, Englewood, N.J.: Prentice-Hall

-- 1965 (with Cynthia A. White) *Canvases and Careers: Institutional Changes in the French Painting World*, New York: John Wiley and Sons

-- 1969a "Control and Evaluation of Aggregate Personnel: Flows of Men and Jobs" *Administrative Science Quarterly* 14:4-11

-- 1970a *Chains of Opportunity: System Models of Mobility in Organizations* Cambridge: Harvard University Press

-- 1970c "Stayers and Movers" *American Journal of Sociology* 76:307-324

-- 1970d "Simon out of Homans by Coleman" *American Journal of Sociology* 75:852-862

-- 1971 (with Francois Lorrain) "Structural Equivalence of Individuals in Social Networks" *Journal of Mathematical Sociology* 1:49-80

-- 1972 *On Sociology* Unpublished notes

-- 1973a "Everyday Life in Stochastic Networks" *Sociological Inquiry* 43:43-49

-- 1976 (with Scott A. Boorman and Ronald L. Breiger) "Social Structure from Multiple Networks: Blockmodels of Roles and Positions" *American Journal of Sociology* 81:730-780

-- 1976 (with Scott A. Boorman) "Social Structure from Multiple Networks: Role Structures" *American Journal of Sociology* 81:1384-1446

-- 1976 (with Gregory H. Heil) "An Algorithm for Finding Simultaneous Homomorphic Correspondences Between Graphs and Their Image Graphs" *Behavioural Science* 21:26-35

-- 1981b "Production Markets as Induced Role Structures" pp. 1-57 in *Sociological Methodology* edited by Samuel Leinhardt, San Francisco: Jossey-Bass

-- 1987 (with Eric M. Leifer) "A Structural Approach to Markets" pp. 85-107 in *Intercorporate Relations: The Structural Analysis of Business* edited by Mark S. Mizruchi and Michael Schwartz, New York: Cambridge University Press

-- 1990a "Interview with Harrison White" pp. 78-95 in *Economics and Sociology, Redefining Their Boundaries: Conversations with Economists and Sociologists* edited by Richard Swedberg, Princeton: Princeton University Press

-- 1990b "Control to Deny Chance, but thereby Muffling Identity" *Contemporary Sociology* 19:783-788

-- 1992a *Identity and Control: A Structural Theory of Social Action* Princeton: Princeton University Press

-- 1997a "Can Mathematics be Social? Flexible Representations for Interaction Process and Its Socio-cultural Constructions" *Sociological Forum* 12:53-71

-- 1999c *Markets in Networks: Social Construction Models from Economic Networks* with the collaboration of Matthew S. Bothner, New York: Paul F. Lazarsfeld Center of the Social Sciences at Columbia University

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Notes

[1] As the underlying substratum of thought ontology is a "theory of reality" (Mannheim 1936:259), i.e. a theory about the nature, constitution and structure of reality. Any particular ontological outlook assumes the kind of object there to be. It is a certain standpoint defining the most general and necessary characteristics that anything must have in order to account as being. The issue has obviously a decisive impact on how we perceive social reality and how we approach the problem of understanding social life, forming thus the basis on which all sociological work rests. To a large extent, discussions of this type are carried on in the form of questions about the proper subject matter of sociology, --a topic to which we shall return. Methodology, taken in the broadest sense of the term, i.e. as "the logic of scientific procedure" (Merton 1963:86), is too of fundamental importance for any system of thought and one has to have a more or less clear picture of the basic methodological standpoints of a social thinker before trying to examine his or her substantial ideas. There is however a close substantial link or affinity between the kind of ontological outlook adopted in a theory and the methodological stand taken by that theory. To this parity of positions witnesses Giddens, for instance, who holds that "(t)he debate between the two positions (i.e. methodological individualism and 'structural' explanation') is in some part the methodological counterpart to the dualism subject and social object that has characterized the ontology of the social sciences" (Giddens 1984:213). Bhaskar seems to take this parity further and suggests the primacy of ontological investigation when he suggests that since "the objects of scientific inquiry are either empirically given or even actually determinate chunks of the world ... it would seem that we must first know what kind of things societies and people are before we can consider whether it is possible to study them scientifically ... The question (is) what properties do societies and people possess that might make them possible objects of knowledge for us" (Bhaskar 1989:13).

[2] Traditionally, driven by a quest for general laws, attempts of this kind have often been associated with mechanical or biological conceptions of social reality. Based on crude analogies or hormophies rather than close empirical examinations, such attempts have presented more fabrics of undisciplined fantasy than findings of scientific research. More recent attempts however are more guilty of abstracting certain, often formal, aspects of the universal scientific procedures -such as elaboration of general models- prevalent more firmly in physics at the expense of far more important aspects like empirical sensitivity to, and respect for, the complexity of reality. This neglect of reality is often justified by the argument that the higher the level of abstraction the more general and the less discipline-bounded the models.

[3] *Solid State Physics* is ...

[4] *Knot theory* is ...

[5] While an *isolated system* exchanges neither matter nor energy with its surrounding, both *closed* and *open systems* transfer energy with the environment; yet it is only in the latter that matter too can be transferred forth and back across the boundaries between the system and its surrounding.

[6] The French academic system of the 18th and 19th century represents, however, a failure. The greatly expanding number of professional painters, mainly the sons from the emerging bourgeois class trained in Paris and Provinces, was the source of enormous pressures on an organizational and economic framework which was designed to handle only a few hundred painters. Facing these pressures, the French academic system proved rigid and unable to change sufficiently. "As a national art machine to recruit painters and dignify painting, (the French academic system) was certainly successful; as an organization to support, oversee, and direct professional painting careers, it fell far short. The majority of aspiring artists, talented or mediocre, were channeled exclusively into the prestigious career of painting. The system provided no escape hatch, via alternative art careers" (White & White 1964:261-2). Due to its inherent inabilities to change, however, the system was replaced eventually by a new, more flexible institution -a kind of open market for art that was "coagulated ... into a few competing nuclei, stable enough to serve as efficient substitutes for government patronage" (White & White 1964:267).

[7] In its typical formulations, structuralism is an approach that rests on ontological assumptions that suggest what Bourdieu (1977:72) calls "the realism of structure". Drawing on such "noxious assumptions" (Giddens 1984:163) and frequently employing mechanical or biological analogies, this approach seeks to reveal the hypostasized overall structure that is to be found "not on the surface, at the level of the observed, but below or behind empirical reality" (Lane 1970, quoted in Marwick 1989:149).

[8] In making this point White seems to be echoing the common observation that the holist sociological paradigm and the associated structuralistic mode of analysis have historically emerged as a conservative reaction to, a critique of, its "natural enemy" (Giddens 1984:213), i.e. the atomist conceptualization of individual. According to this observation, it is in response to the individualistic assumptions that some major social thinkers in nineteenth century like Comte, Marx, Herder and Durkheim begun to articulate ideas of the 'social' and elaborated a set of concepts -such as community, nation, group, class, culture and society- which stood in stark contrast to the individualistic ones.

[9] In *The Rules of Sociological Method* Durkheim commends to sociologists to cultivate a universal scientific approach, or "assume a certain attitude of mind" toward social phenomena and holds that "(t)o treat facts of a certain order as things is ... not to place them in this or that category of reality; it is to observe towards them a certain attitude of mind. It is to embark upon the study of them by adopting the principle that one is entirely ignorant of what they are, that their characteristic properties, like the unknown causes upon which they depend, cannot be discovered by even the most careful form of introspection. The terms being so defined, our proposition, far from being a paradox, might almost pass for a truism if it were not too often still unrecognized in those sciences which deal with man, and above all, in sociology". And he continues, "(w)hat (our rule) demands is that the sociologists should assume the state of mind of physicists, chemists, or physiologist when they venture into an as yet unexplored area of their scientific field" (Durkheim 1982:36-37).

[10] Emphasizing the scientist's readiness to accept whatever the result of his investigation, Durkheim (1982:37) says "(a)s the sociologist penetrate into the social world he should be conscious that he is penetrating into the unknown. He must feel himself in the presence of facts governed by laws as unsuspected as those of life before the science of biology was evolved. He must hold himself ready to make discoveries which will surprise and discomfort him. Yet sociology is far from having arrived at this degree of intellectual maturity". Or, "(sociology) should ... cause us to see things in a different way from the ordinary man, for the purpose of any science is to make discoveries, and all such discoveries more or less upset accepted opinions. Thus unless in sociology one ascribes to common sense an authority that it has not now commanded for a long time in the other sciences -and it is not clear from where that might be derived- the scholar must determinedly resolve not to be intimidated by the results to which his investigation may lead, provided that they have been methodically carried out. If the search for paradox is the mark of the sophist, to flee from it when the facts demand it is that of a mind that possesses neither courage nor faith in science" (1982:31).

[11] Description of *Anatomy and Control of Complex Organizations* sounded as follows: "Recruitment, integration, boundary conditions and coordination in large-scale organizations will be discussed. The emphasis will be on development and application of new concepts, such as vacancy chains, differential flow of

uncertainty, and cycles of structural change. Church, government and private institutional systems, both present and past, will furnish examples." Later the description was changed and read: "Selected theories and case studies of formal organizations extended to more complex institutions such as markets and administrative systems, with special attention to dual hierarchies." *Complex Organizations* was described in the following way: "Compares and contrasts perspectives on complex organizations from several disciplinary points of view. Sample topics include: behavioral models of choice, manipulations and anticipations, networks versus hierarchies, organized anarchies, and inter-organizational relations." The course description of *Organizational Processes in Historical Context* sounded: "Examines operation of organizational decisions in broader historical context. Attempts to derive conclusions on long run structural and policy adaptation. Topics include the meaning of an 'ecology of games' in hierarchical, anarchic, bipolar, fractionated, and market institutional structures. Draws on historical and contemporary case studies" or "The focus is comparative state bureaucracies in Europe. Histories of selected European nations are contrasted to derive alternate forms of state administration and control from elite struggles in the arenas of taxes, military, and law. Organizational forms of interest include centralized bureaucracy, multiple hierarchies, aristocratic networks, and clientage." Finally, *Complex Organizations in Theory and Practice* was described as "How struggles over control shape and are shaped by structural context. Examines mobilization of organizations in diverse periods, regions and institutional settings. Identifies distinctive architectures of interface and strings, such as multiple hierarchies, patronage trees, and area networks. Interplay between rhetorics and boundaries." (Source: *Courses of Instruction, Harvard and Radcliffe College, Faculty of Art and Sciences*).

[12] It may be an interesting speculation that White has been influenced by Kron's amazement with the creation of new entities, like molecules, out of conglomerations of atoms -new entities which are endowed by the mere process of organization with new characteristics, new properties, that its component parts, the atoms, do not posses. The phenomenon, i.e. the emergence and maintenance of organization was for Kron's work from 1939 "the keynote" (Kron 1939:xv), considering it to be of the same nature as the organization of a community of people into a stage, having functions that none of its constituent members has. It also seems interesting to mention that in his shift from theoretical physics to sociology in the second half of the 1950s, White is in effect responding to a call from Radcliffe-Brown who only a couple of years earlier held: "There are certain important branches of science, each of which deals with certain class or kind of structures, the aim being to discover the characteristics of all structures of that kind. So atomic physics deals with the structure of atoms, chemistry with the structure of molecules, crystallography and colloidal chemistry with the structure of crystals and colloids, and anatomy and physiology with the structure of organisms. There is, therefore, I suggest, place for a branch of natural sciences which will have for its task the discovery of the general characteristics of those social structures of which the component unites are human beings" (Radcliffe-Brown 1952:190, quoted in Johnson 1994:1139).

[13] In this paper White develops a model to be used for the calculation of atomic forces constants (afc) in copper crystal and holds that "it can be applicable to gold and silver and that it may not be too inaccurate for the alkali metals" (1958:1104). The novelty of his approach seems to lie in that he derives the afc:s directly, i.e. as the ratio of change in forces between nuclei to an infinitesimal nuclear displacement. "An atomic force constant by definition is the limit of the ration, to the displacement, of the difference between the force component exerted on another nucleus by a nucleus when this displaced from equilibrium along a crystal axis and when at the equilibrium position" (1958:1093). Having investigated the basic "dynamical properties of metal crystals at the atomic level" White however hopes that "from these microscopic properties, we can not only predict macroscopic elastic and thermal vibration behavior and the interaction of the crystal with electromagnetic radiation but also obtain insight into various types of distortion of the perfect lattice" (1958:1092).

[14] Reviewing the definition of social structure in anthropology and sociology, Nadel is puzzled by the fact that, in spite of the various ambitious definitions supporting it, the terms is often used in such a lax way. According to him, "(i)n sociology, the concept (of social structure) is mostly used in a broad and almost blanket fashion, referring to any or all features contributing to the make-up of a society: it thus becomes simply a synonym for system, organization, complex pattern, type, and indeed does not fall very short of 'society' as a whole" (1957:2). Or, "(w)hat the student of social structure really do is to describe, still in heavily quantitative terms, types of relationships and groups, their inter-connections through activities and recruitments, the believed-in values and norms of the people, and the obtaining sanctioning mechanisms; nor do they exclude the psychological concomitants of relationships ('loyalties', 'sentiments', and other motivations). In no sense do these studies bear out the claim of the analysis of the 'structuralist' school that they follow rigorous procedure and aim at high level abstractions" (Nadel 1957:155).

[15] In an interview conducted by Richard Swedberg for *Economic Sociology: European Electronic Newsletter* (October 1999) Mark Granovetter, one of White's early students at Harvard who spent quite many years working with him, comments on the issue: "I and others who worked with Harrison White as his graduate students in the 1960s, were in rebellion against the dominant Tallcot Parsons' framework which looked like a rather elaborate taxonomy and did not pay enough attention to concrete social relations and networks of relations. It seems to me that in what you might call a sort of over-reaction to this very abstract argument, we were aggressively uninterested in cultural or mental states. ... we were almost, though never quite, behaviorists without ever giving up the idea that meaning is terribly important -we had after all read Weber. But it wasn't clear how to integrate that with the more concrete and manipulable and non-tautological parts of social life that we were paying more attention to, like social networks". Recent theoretical development in White has however meant a revaluation of the concept of the culture.

[16] White's treatment of the concept of 'role' is particularly illustrative in this respect. For instance while White and Lorrain (1971:49) credit Nadel for having developed an adequate conception of social structure, they nonetheless criticize him for emphasizing "mainly on cultural interrelations of role-sets". As known, for White 'role' is a relational concept and defined primarily socially, i.e. basically in terms of a node's set of relations to its neighboring nodes, rather than being culturally determined in terms of prescribed expectations, commitments, obligations, etc. This is, however, a point, to which we shall return further bellow.

[17] It does appear not too inaccurate to see in White's focus on stochastic processes yet another trace of a natural scientific impact. One of the pioneers of the quantum mechanics and the winner of the Nobel Prize in physics in 1954, Max Born (1951:1) opens his elegant book on modern mechanics, *The Restless Universe*, by holding that "(i)t is odd to think that there is a word for something which, strictly speaking, does not exist, namely, 'rest'". Randomness and not the rigid regularity being the very characteristic of this universe in motion, Born asks (1951:17) "(h)ow is it that chance plays a part in so exact a science as Physics? If we admit the influence of chance, we are surely denying the strict accuracy of the laws of nature?" And he answers: "(a)s a matter of fact, the most recent development in physics, quantum mechanics, … shows that we must drop the idea of strict laws, and that all laws of nature are really laws of chance, in disguise"(1951:19).

[18] Consider the situation when you are walking on the street by a building and, suddenly, a rock falls down and hits you on the head. According to Collins (1984:333), "(t)he fact that you are walking by the building when the rock fell off the roof is … the product of a series of causes. … There need be nothing uncaused about any aspect of the situation, … But the two causal orders are unconnected. There is no relationship … between your walking there at the time and the rock falling when it did. *It is this unconnectedness of different causal orders in the universe that gives rise to the phenomenon of chance*" (original italics).

[19] By-passed for long, orientation to others as an crucial element of social action already identified by Weber has been brought into focus only recently by Swedberg in *Orientation to Others and Social Mechanism* from 1999, where he presents a full account of the concept in Weber's definition of social action and discusses many stances of its rather implicit use in modern sociology.

[20] As Durkheim emphasized it, a science cannot establish itself when it lacks a subject matter *sui generis*, distinct from that which is the focus of inquiry for other sciences. Being a science concerned with facts of social life, sociology must in other words, have a distinct filed to explore, a distinct substratum or a distinct kind of datum to describe and interpret, providing an infallible guide to distinguish it from other sciences. Though at first sight this presents no difficulty, ever since Comte proposed the name 'sociology' the issue has remained controversial. Parallel with all subsequent attempts to give the term a definite content, there has been a sustained denial that the proposed science could have a subject matter not already pre-empted by other sciences. This sort of attack has been encouraged by the seemingly hopeless disagreement among sociologists themselves about the scientific task they are trying to perform and still the very term itself tends to assume various connotations within different sociological traditions referring to different questions such as the central issues or interests of sociology, its basic building blocks, its explanandum, etc.

[21] Given the need of a distinct subject matter of sociology, especially to provide the epistemological justification for its separation from psychology, Durkheim sets out to identify 'the social', arguing that if society were not to generate phenomena peculiar to itself and distinct from those observed in other realms of nature, sociology would have no subject matter of its own. For it to be able to have a *raison d'être*, there must be in reality some element which merit being called *social* and which are not simply aspects of another order of things. To defend

this view Durkheim holds that "(t)he proposition which states that social facts must be treated as things -the proposition which is at the very basis of our method- is among those which have stirred up the most opposition. It was deemed paradoxical and scandalous for us to assimilate to the realities of the external world those of social world. This was singularly to misunderstand the meaning and effect of this assimilation, the object of which was not to reduce the higher forms of being to the level of the lower ones but, on the contrary, to claim for the former a degree of reality at least equal to that which everyone accords to the latter" (Durkheim 1982:35).

[22] In his presentation Emirbayer (1997) distinguishes two distinct varieties of the substantialist mode of analysis: the perspective of self-action and that of interaction. The former is to be found in rational choice theory which is essentially based on the assumption of the givenness and fixity of units. It is also prevalent in the norm-based models of social action which take as their basic unit of analysis norm-following individuals depicted as "self-propelling, self-subsistent entities that pursue internalized norms given in advance and fixed once for the duration of the action sequence under investigation" (Emirbayer (1997:284). "In a very different way," Emirbayer continues, "the idea of self-action also insinuates itself into social thought by means of holistic theories and 'structuralisms' that posit not individuals but self-subsistent 'societies', 'structures', or 'social systems' as the exclusive source of action. Proponents of these approaches ... all too often fall back upon the assumption that it is durable, coherent entities that constitute the legitimate starting points of all sociological inquiry. Such entities possess emergent properties not reducible to the discrete elements of which they consist" (1997:285). "The second key category of substabtialism ... is that of inter-action. In this approach, which is "frequently confused with more truly relational position of view", "entities no longer generate their own action but rather the relevant action takes place among the entities themselves. Entities remain fixed and unchanging throughout interaction, each independent of the existence of the other, much like billiard bolls or the particles in Newtonian mechanics" (1997:285-6). For an interesting presentation of the relational mode of thought in general and its application in sociology, especially by Bourdieu, see Vadenberghe 1999.