

THE CONCEPTS OF HOLISM AND REDUCTIONISM IN SOCIOLOGICAL THEORY

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Abstract

The present study is an attempt to clarify some aspects of the controversy between holism and reductionism in sociological theory. What are the theoretical and non-theoretical motives behind classical holistic and reductionistic approaches to sociological theory? Are they chiefly ontological, epistemological, normative or of a more practical nature? An analytical framework making it possible to draw distinctions of these types is set up. The framework is then used to investigate three classical sociological theories, those of Durkheim, Spencer and Homans, exemplifying three distinct approaches to the holist-reductionist controversy. It is hoped that through the analytical framework developed a clearer understanding of the controversy in classical theory can be gained, and that this in turn will facilitate an understanding of the same issue in contemporary sociology.

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The concepts of holism and reductionism have a long standing in sociological debate and have at times played an important part in the development of sociological theory. Unfortunately they have not been used in an unambiguous and completely coherent way, but instead seem to cover a host of somewhat related but partly different phenomena within sociological theory.

This essay is an attempt to remedy this conceptual confusion by exploring and clarifying some of the different ways in which the terms holism and reductionism have been used in selected sociological theories.

It also attempts to survey some of the arguments and reasons given both in favor and against the different types of holistic and reductionistic sociological theories.

Finally, after having discussed holism and reductionism in this more general way, I intend to take a look at the theories of Durkheim, (as presented in *Suicide*) Spencer (as presented in *The Principles of Sociology*, vol. I) and Homans (as presented in *Social Behavior*), and try to determine the sense in which the concepts of holism and reductionism are applicable to their respective theories, and what particular types of arguments are used in these works in support of a reductionistic or holistic standpoint.

Finally it is important to point out that the terms holism and reductionism are used in different senses in different scientific areas; for example philosophy and psychology. What I shall have to say here only applies to sociological usage of these terms.

As a starting point for a more general discussion of the concepts of holism and reductionism, I want to adduce some classical and some modern examples of what commonly is considered to be holism and reductionism.

Perhaps the most central thesis in sociological holism goes as follows: *A whole is something more than the sum of its parts or a whole has properties that are independent of and different from the properties of its parts.*

An early example of what is meant by this, I think, can be found in the first chapter of Adam Smith's *The wealth of nations*. In this chapter Smith writes on the division of labour and by means of the example of a pin factory, he brings out one of the most important tenets of sociological holism.

Smith points out that a pin-maker working on his own could at most hope to produce 20 pins a day, but if he got together with some other pin-makers and started a factory, the result would be much different. "I have seen a small factory of this kind where ten men only were employed they could when they exerted themselves, make among them about 48 thousand pins in a day. Each person therefore, making a tenth part of 48 thousand pins, might be considered as making four thousand eight hundred in a day. But if they had all wrought separately and independently , ... they certainly could not each of them have made twenty... that is

certainly not the two hundred and fortieth ... part of what they are at present capable of performing..."

In fact these ten men, when working together as a whole, managed to produce much more - namely 48 thousand pins a day.

Therefore according to holistic creed, we can see that the property of the whole - the total pinproduction - is not equal to the sum of properties of its constituent parts - the individual pin-production of each man.

The holists, then, hold that something new and interesting happens when individuals combine and start to interact with each other. So called *social wholes* emerge, these social wholes are just as real as the individuals that make up the social wholes. But most importantly they have properties that are different and distinct from the properties of the individuals that make up the social whole. The property of a social whole is not reducible to the properties of its constituent parts.

Durkheim for example holds in *Les Regles de la méthode sociologique* (p. 102): A whole is not identical with the sum of its parts. It is something different, and its properties differ from those of its component parts.... (p. 103) By reason of this principle, society is not a mere sum of individuals. Rather the system formed by their association represents a specific reality which has its own characteristics. "

Or we can take a look at a modern textbook of sociology, Marvin Olsen's *The Process of Social Organization* (p. 41): "In other words patterns of social order possess a unity that is always greater than the sum of their component part." and on p. 61 "These patterns of social order display properties of their own that are not inherent in the constituent members. As a result they possess a unity greater than the sum of their component parts, which gives them, an existence of their own."

For the holist in sociology it is these *social wholes* which form the social facts that provide the input data upon which sociological theory is based. Furthermore, the holist maintains that it is from these social wholes that theoretical concepts should be formed and that the propositions of sociological theory are made up by statements that indicate the relations between such concepts.

The holist then sees as the subject matter of sociology - social facts - which according to him consist of social wholes and their special properties.

Durkheim says in *Les Régles* (p. 122) "Social life... (is) ... a system of things existing separately, by reasons of causes peculiar to itself and on p. 145 "We have shown that a social fact can be explained only by another social fact."

To be a reductionist, on the other hand, implies that one denies most of the propositions put forth above. One denies the central holistic thesis of the whole being more than its parts. One instead maintains that the whole is precisely the sum of its parts. But the reductionist points out that it seems as if the holist, in his denial of the non-summative character of social wholes, uses the concept of a property only in the sense of a one-place predicate, thereby excluding so-called relational

properties. For example one-place predicates are properties that we can find in expressions like, *Adolf is tall*, *the apple is red*, and which normally are rendered in predicate logic in the following way: Ta where T = tall, a = Adolf and Rb where R = red and b = apple.

Two or many-place predicates can be found in relational expressions like *Adolf is eating the apple* or *Washington D.C. is between Atlanta Ga. and New York*. These are rendered in predicate logic like Eab where E = eat, a = Adolf and b = apple and $Bcde$ where B = between, c = Washington D.C., d = Atlanta Ga. and e = New York.

The reductionist argues that if properties are allowed to be many-place predicates or in other words relational properties then the holistic paradox of the whole being more than its parts will not arise. A whole where all the properties including the relational are taken into account is not more than its parts. Thus while the holist strictly separates relational from non-relational characteristics, the reductionist includes them all in a systematic unit.

For the reductionist social wholes and social facts are reducible to 1.) the properties of individuals and 2.) the relations between these individuals. Therefore the concepts of sociological theory should be based on individuals and the properties of individuals. (Where the properties are taken in the inclusive sense of both one- and two-place predicates.)

The propositions of sociological theory should then indicate both relations between and properties of individuals.

As an example of this reductionist approach, I quote Homans in *The Nature of Social Science* (p. 70) (Swedish translation) "Samtliga samhällsvetenskapers generaliserade satser är psykologiska, således satser om människors beteenden, snarare än satser om samhällen eller andra sociala grupper som sådana. Även om det kan komma en tid då dessa satser i sin tur skall visa sig följa av ännu mer generella satser - t ex fysiologiska, kan detta senare avgjort inte göras för närvarande."

We see then, that there are two distinct approaches to sociological theory based on the concepts of holism and reductionism. We are now going to take a closer look at these concepts and the different arguments that can be adduced in favour or against adopting one or the other approach to sociological theory.

THE ONTOLOGICAL STATUS OF SOCIAL REALITY

First there seem to be ontological differences involved both in being a holist and in being a reductionist. (Ontology is here taken in the philosophical sense as the enquiry into what entities fundamentally exist.) We first take a look at holism.

Durkheim writes as follows in *Les Règles* (p. XLiii) ... (we) claim for the higher forms a degree of reality at least equal to that which is readily granted to the lower. We assert not that the social facts are material things but that they are things by the same

right as material things, although they differ from them in type. " (p. XLiii) "Social phenomena are external to individuals." (p. 7) "(Social manners) acquire a body, a tangible form and constitute a reality in their own right, quite distinct from the individual facts which produce it."

If we look at Marvin Olsen's *The Process of Social Organization* (p. 41), he says: "We argued in the first chapter that social order *not only* emerges through the interactions of persons behaving as social actors, but also exists independently of its creators.... Patterns of social order exhibit numerous properties that are not characteristic of their individual members.... if a phenomenon exhibits properties that are distinctly its own then it must have an existence of its own." (my underlining)

There is further evidence that ontological implications are involved. Durkheim explicitly claims that the emergent qualities or properties of a social whole make up a level of reality which is qualitatively different from the level of reality in which individuals and their properties dwell. He therefore concludes that social reality is irreducible to the level of individual reality.

As support for this claim Durkheim draws analogies with other sciences viz. biology *Les Régles* (preface to second edition p. XLvii) : "The living cell contains nothing but mineral particles, as society contains nothing but individuals. Yet it is patently impossible for the phenomena characteristic of life to reside in the atoms of hydrogen, oxygen, carbon and nitrogen. How could the properties of life exist in inanimate elements? ... The biological properties could not exist equally in all the elements because the latter are dissimilar by nature; equal carbon is not nitrogen and consequently cannot have the same properties as nitrogen or function in the same way... Life could not thus be separated into discrete parts, it is a unit, and consequently its substratum can only be the living substance in its totality and not the element parts of which it is composed." Another example taken from metallurgy reads as follows: "The hardness of bronze is not in the copper, the tin or the lead, which are its ingredients and which are soft and malleable bodies, it is in their mixture."

Durkheim means that in the same way as in these examples new levels result from the combination of elements on other (underlying) levels, the level of social reality emerges, separated from the level of individual and psychological reality.

Thus (ibid p. XLviii): "Let us apply this principle to sociology... this synthesis constituting every society yields new phenomena, differing from those which take place in individual consciousnesses, we must indeed, admit that these facts reside exclusively in the very society itself which produces them, and not in its parts, i.e., its members."

What type of existence or ontological status should one grant this new level of reality which Durkheim argues for? We know that it is separate and different from other levels of reality, and in particular we know that it is independent of and different from the properties of individuals that make up social units. There seem to

be two alternatives for which type of ontological status we are going to grant social reality, within a holistic framework:

- A. Social reality is completely independent and torn loose from the reality of its constituent parts - extreme holism.
- B. Social reality is some kind of epiphenomenon to its constituent parts, it has its own properties, but it is not independent of its constituent parts - moderate holism.

Alternative A seems to be the appropriate one, for extreme doctrines like Rousseau's concerning *La volonté generale*. *La volonté générale* or the *general will* of a social group is a social phenomenon completely independent of what any of the members in the social group think or believe. (For further details see Zetterberg *Om teori och belägg i sociologin*, p. 64-65)

The moderate holism of alternative B seems to be the alternative that is applicable to most other types of holistic theory, although Durkheim's phrasing at times when he puts forth his doctrine of the collective consciousness places him dangerously close to Rousseau.

The reductionists do not accept the arguments we have cited above to the effect that there are emergent qualities inherent in different levels of reality. There is no special level of social reality. Only properties belonging to and relations between individuals exist. (Some reductionists give their individual variables a wider range so as to include phenomena such as human artifacts and objects of the natural environment.) We can not observe any emergent properties or qualities anywhere, such qualities are in fact only very complex conglomerates of individuals their properties and relations between these.

The reductionists have specific arguments against both type A and type B holism. Against the extreme holism of type A typified by theories like Rousseau's, they offer the following simplistic argument: "Take away all the constituent parts from a social whole and there is no more social whole In other words there can exist no such thing as a social whole completely independent and torn loose from its constituent parts.

THE EPISTEMOLOGICAL STATUS OF SOCIAL REALITY

Against the moderate holism of type B, which I believe to be the ontological stand taken by most holistic theories in sociology involving ontological commitments, the reductionists offer an epistemological argument of the following type.

All meaningful scientific statements about reality must in some way be derivable from direct empirical observation. The chain of derivation may be long, but it must in principle be possible to perform such a derivation. If one abandons this fundamental idea, it is very difficult to see, how one could separate scientific

thought from completely loose speculation and fantasy. This thought has been common to many sociologists e.g. Zetterberg *Om teori och belägg*, p. 66.

"I egenskap av socialteoretiker gör vi således klokt i att välja primitiva termer som betecknar aktörer och typer av handlingar. Eftersom dessa primitiva termer sedan används som byggstenar, som i olika kombinationer med varandra bildar mer komplexa termer, är vi säkra på att t o m mycket komplexa begrepp -såsom egenskap, institution, feodalism eller samhällsklass -kommer att befinna sig på rätt sida om metafysiken."

Now we apply this epistemological principle to the moderate holism of type B. This type of holism asserts that even if social reality in the final instance is dependent on the existence of its constituent parts (i.e. that it has a kind of epiphenomenal existence) this does not mean that the properties of social reality are reducible to the properties of individuals. On the contrary, they are irreducible.

The reductionists now point out that the only things we will ever be able to directly observe are the properties of individuals, human artifacts and the natural environment. Only the properties of constituent parts, not the properties of the social wholes themselves, are observable. By denying that it even in principle by a long chain of derivation, would be possible to derive the properties of social wholes from such observable properties, the holists have in principle excluded themselves scientific theory. The holistic irreducibility assumption amounts to a denial of the basic presuppositions for validating scientific knowledge. (Whether this reductionist conception of the nature of scientific validation is correct, is as we know the subject of much debate in the theory of science.)

THE INDEPENDENCE OF SOCIOLOGY

The above given arguments have shown that in at least some types of holism and reductionism - ontological issues are involved. We shall later see that this is not the case for all types of holism and reductionism. But before we look at other ways of viewing the holist - reductionist debate, we must introduce another issue that has been crucial in the rise of sociological holism.

This is the idea that each science explores its own area of reality and if two sciences explore the same area of reality they are in fact not separate sciences. For a person who believes in this thesis and Furthermore thinks that social phenomena are interesting, it becomes essential to show that sociology really has its own distinct area of reality to study. Durkheim *Les Règles* (p. 145-146).

"A science can regard itself as definitively established,... only if it has achieved independence for itself. For it can justify its existence only when it has for its subject-matter an order of facts which other sciences do not study."

For a person then, who like Durkheim wants to show that sociology has its own object of study which does not coincide with what is studied in chemistry, biology or psychology, the holistic thesis offers very good support. For if it is correct, it follows

as we have seen that social phenomena constitute their own area or level of reality with properties that are irreducible to properties that are the object of study of any other science e.g. psychology. It would in principle be impossible for psychological theory which is based on individuals to account for social reality.

With the holistic principle in his hand Durkheim can provide the support necessary to justify the existence of sociology as a separate science distinct from psychology and biology.

The attempts to make sociology an independent science have another consequence, sociological theory must be purged from everything nonsocial. Its concepts, relations and causal ties should be purely social. Les Régles (p. 122 and p. 145).

"Social life... (is) ... a system of things existing separately by reasons of causes peculiar to itself."

"We have shown that a social fact can be explained only by another social fact.. Sociology is then not an auxiliary of any other science; it is itself a distinct and autonomous science."

It should be noticed that only by making an ontological assumption can Durkheim in principle exclude other sciences from the study of social phenomena. This explains why certain holists attach such importance to this ontological commitment. It guarantees for sociology the right to be a science.

The reductionists for their part deny that each science has to have its own distinct part of reality to study. They say -that there really are no 'pure sciences' of the type Durkheim took for granted. Physics and chemistry overlap internally and they both in their turn overlap externally with other sciences. There are also explicit "hybrid sciences" like bio-chemistry and ecology.

Sociology does not have to justify its existence by proving that it has its own special subject matter. The subject matter of sociology is shared by psychology, economy, history and biology. Homans; writes -*The nature of social science* (Swedish translation p. II).

"Med samhällsvetenskaper menar vi... psykologi, kulturanthropologi, sociologi, nationalekonomi, statskunskap och möjligen lingvistik. Dessa vetenskaper är i själva verket en enda. De behandlar samma sak, nämligen mänskligt beteende..."

Since the reductionists see no need for a special subject-matter for sociology, the more or less normative motivation for holism given by Durkheim - without holism no sociology - leaves the reductionist indifferent. In fact he on the contrary thinks it important to stress the similarities between the social sciences because this enables him to formulate a more general social theory.

UNIT SIZE

Leaving the independence of sociology and ontological commitments a simple but inadequate way of viewing the difference between holism and reductionism is simply in terms of unit size. The holists use larger units in their theories than the reductionists.

The reductionists insist that there is one fundamental unit in sociological theory and that is the individual, upon which all theory should be built. The holists for their part choose large units like groups and societies. They use aggregate properties like integration, and cohesion as basic concepts which stand in relations to each other and need no further explication.

One could say then that to be a holist is to insist that sociological theory can and should explain social phenomena by referring only to large units and the properties of these. On the other hand to be a reductionist is to insist that social phenomena can and should be explained only by referring to individuals and their properties.

However, to characterize the difference between holism and reductionism as being one primarily of unit size misses by a long shot most of the reasons that have made sociologists adopt one or another position on this issue.

ASPECTS OF REALITY

A more interesting way of accounting for the difference between holism and reductionism is to say that their respective protagonists in a way are talking past each other, for they are not talking about the same things.

To talk about sociology is not to talk about psychology. One can view a group of people in at least two ways, either one is interested in the group as such or one can be interested in each person of the group individually. One is interested in the same part of reality, but in different aspects of that part. In biology a cell has certain properties such as life, but if we look at the same cell from the point of view of chemistry - it has only chemical properties - or rather, we are interested only in its chemical properties.

That one can view an object from different points of view is a well known phenomenon in perceptual psychology. For example the figure below depicts the so called "duck rabbit".



Depending on how we organize the piece of reality (here the ink lines on the paper) we are looking at - different images appear. Now a duck, then a rabbit.

In much the same way one can view a group of people from different perspectives; the perspectives of chemistry, biology, psychology and sociology for example.

The difference between the holist and the reductionist could then be explained in the following way. They are both looking at the same class of phenomena, but they are interested in different things - they view the same piece of reality out of different perspectives.

The holistic paradox which leads to the belief in emergent and separate levels of reality which are irreducible in relation to each other can be explained simply as the switch from one perspective to another. Or to phrase it the same way this section started out - one starts talking about something else than before.

Even if it would be fruitful to speculate in further detail as to the origin perspectual differences, it seems reasonable to say that it involves sets of different assumptions leading to different organisations and interpretations of the data at hand. For the assumptions in their turn, one can then find other social, psychological or biological explanations.

In any case it is important to differentiate the perspective; its underlying set of assumptions and organization of data from the linguistic codification of these in the conceptual framework of a certain theory which the perspective can give rise to.

What seems to be a mere difference in unit size can thus be seen to often involve a difference of perspective and conceptual framework. One can be interested in the social aggregate as such or one can be interested in the component parts that make it up.

I think the ontological differences between holism and reductionism can be explained satisfactorily in the same way. The properties of social wholes are irreducible to the holist because to reduce them would involve a change of perspective and then the properties would be lost. One would still be dealing with the same things but one would be interested in a new set of assumptions about and organisations of them.

The reductionist either cannot perceive the holist perspective or maintain that everything that is important can be said within a reductionist perspective with reductionist assumptions and that therefore there is no need for a holist perspective. The holist however maintains that the holistic perspective is interesting in its own right.

So in addition to those epistemological considerations discussed above, we see that the conflict involves an instance of the perpetual debate between exhaustiveness and parsimony in scientific description.

GENERALISABILITY OF THEORY

Now someone might hold that even if there is nothing inherently necessary or inherently right or wrong about either holism or reductionism, that they are two alternative ways of doing sociology depending on differences in perspective and interest, there might be criteria by which one could choose between a holistic theory and reductionistic theory.

Criteria pertaining to the explanatory force of a theory would be suitable for this job. Some examples of criteria having this character would be the following: What is the power of prediction for each theory and how wide a range of phenomena can it account for? Is the theory internally consistent? Is it economical? Does the theory have a high degree of an intuitive and evidential quality? Does it in comparison with some other theory that accounts for an equivalent range of data exhibit more simplicity than this other theory?

Considerations of this type involve no ontological commitments but are simple pragmatic considerations of the explanatory power of a theory.

Much of the debate between holists and reductionists has centered on questions such as these, and many people take holistic or reductionistic standpoints because of purely pragmatic reasons. As we shall see later Homans belongs to this category. - His reasons for being a reductionist is that he thinks that theories that are formulated within reductionist sociology have a much greater explanatory force than those that have been formulated within holistic sociology.

II. In the second Part of this essay, we are going to take a look at three sociological theories, each formulated from or exemplifying a different standpoint in the holism-reductionism debate. The first is Emile Durkheim's holistic theory about suicide. The second is George Casper Homan's reductionistic theory about elementary social behavior. And the third and last is Herbert Spencer's theory of social evolution, in which he uses both a holistic and a reductionistic perspective. The survey of these three theories is not Meant to be an exhaustive account in any way. 'it only attempts to, bring out and exemplify the possible structure of holistic or reductionistic theories in brief outline.

EMILE DURKHEIM'S THEORY OF SUICIDE

The study of suicide serves a double purpose for Durkheim. On the one hand, he is able to defend his holistic thesis that there is a distinct social reality sui generis. On the other hand, he can show how sociological theory of the "pure" type he thought necessary can be constructed.

Durkheim wants to show that suicide which is normally thought of as a highly individualistic phenomenon, can really be satisfactorily explained only within a holistic perspective which sees suicide as a social phenomenon to be explained by social causes.

What Durkheim wants to explain is not why a certain individual in a certain situation commits suicide, but rather the statistical fact of the suicide rate. The remarkable fact about the suicide rate is its constancy. Scattered individuals in society achieve the same net-effect year after year, but this achieved net-effect is different depending on the society being studied. In other words the suicide rate of a certain society is constant but there is a variation between societies.

Durkheim in his study wants to explain the stability of the suicide rate and he therefore considers Possible causes of suicide which have been proposed by other social theorists. We shall take a look at the way he treats some of these causes, the way in which he shows that they are insufficient as explanations of the stable suicide rate, and finally how he shows that the only explanations that will do involve causes of a truly social character.

The causes of suicide that Durkheim studies initially are all of what he believes to be an individualistic or extra-social type -the type of cause that would be offered by a reductionist explaining suicide. They are the following, out of which we will only consider some in detail.

First, there are causes which can be looked upon as individual predispositions of varying kinds; psychopathical and psychological states such as insanity, melancholy, neurasthenia and alcoholism; further there are different racial and hereditary factors by which the individual is conditioned.

Second, there are causes which Durkheim refers to as cosmic factors (factors of the natural environment) such as geographical location, climatical variations, and seasonal temperatures.

Thirdly, Durkheim disqualifies "imitation", which had been proposed by his antagonist Gabriel Tarde, as the determining factor behind suicide.

One might question the correctness of classifying insanity, alcoholism and neuroasthenia as extra-social phenomena. But to Durkheim all psychopathical states were properties of individuals and therefore extrasocial. He does not seem to have considered the possibility of viewing psychological states as social phenomena in the vein of G.H. Mead's symbolic interactionism or some other such theory. Anyhow even if Durkheim was wrong in classifying these three factors as extra-social, this constitutes no serious flaw in his argument. It only shows that even if the causes of suicide must be social, not all possible social phenomena will qualify as candidates. (One might further criticize the correctness of Durkheim's statistical figures, but as the point of this essay is to use Durkheim's study as an example of holism, we need not concern ourselves with this objection.)

Now let us consider three examples of how Durkheim disqualifies what he thought of as extra-social explanations of suicide; alcoholism, heredity and seasonal temperature.

ALCOHOLISM

Suicide (p.78)

"At first there seems to be a closer relation between the quantity of alcohol consumer and the tendency to suicide, at least for our country. Indeed most alcohol is drunk in the northern departments and it is also in the same region that suicide shows its greatest ravages. But first the two areas have nothing like the same (exact) outline on the two maps... In short even to the extent that there is some coincidence it proves nothing being random."

And Durkheim continues in the same vein comparing alcoholic consumption and rate of suicide in different countries.

	<u>Consumption/inhabitant</u>	<u>Suicide/million persons</u>
France	2.84	150
Belgium	8.56	68
England	9.07	70
Sweden	10.34	85
Russia	10.69	very few
St. Petersburg	20.00	68.8

Durkheim, with these figures and other figures that show alcoholic insanity as compared with suicide in different French departments, shows that the apparent connection between alcoholism and the tendency to suicide is completely spurious. Alcoholism will therefore not do as a determining cause for suicide.

HEREDITY

The theory that views suicide as determined by race implies that suicide is a biologically hereditary phenomenon as opposed to a cultural phenomenon. Durkheim wants to show that the tendency to suicide is not hereditary. To show that suicide is hereditary one would have to show that the majority of suicides were committed by individuals genetically related to each other. Durkheim critically examines the facts in favour of this. All the data that he finds are collected in mental hospitals and therefore concerns insane persons. The highest relative proportion of suicides committed by genetically related persons found anywhere- is 28%. Other figures are 1%, 4% and 13%. These figures are not very convincing support for hereditary suicide. But Durkheim has other arguments. He- maintains that insanity is one of the best examples of a hereditary sickness (a questionable proposition) and that there-fore any survey conducted on insane -persons is bound to have a bias in favour of hereditary factors, and that this partly disqualifies even the above figures. Furthermore he contends that the hereditary tendency would have to be of a very strange type.

Suicide (p. 97)

"In families where repeated suicides occur, they are often performed almost identically. They take place not only at the same age but even in the same way."

How ridiculous would it not be, says Durkheim, to not only have to admit a hereditary tendency to suicide, but a hereditary tendency in the method of committing suicide as, eg. by hanging or shooting.

What these facts instead show according to Durkheim is the contagious power of example. (p. 97) "Do not these facts rather show the great contagious influence of suicides, already recorded in their family history, on the minds of the survivors? For they must be besieged and persecuted by these memories to be persuaded to repeat the act of their predecessors so faithfully."

Durkheim then gives numerous examples of suicide epidemics, where suicides were performed in an exact identical way, and heredity was out of the question. If the contagious power of example is true of these cases, there is very little reason to believe that this is not also the reason behind those cases which seemed to provide evidence for the heredity hypothesis.

There is some further more doubtful evidence cited by Durkheim against heredity as a determining cause of suicide, but we need not concern ourselves with that. To summarize we can say that Durkheim believes himself to have provided good although not conclusive evidence against the heredity hypothesis and that he is therefore making a reasonable claim in denying that suicide is determined by biological factors.

SEASONAL TEMPERATURE

Suicide (p. 109)

"First this theory (that the suicidal rate varies with temperature) implies a most debatable conception of suicide. It assumes that its constant psychological antecedent is a- state of overexcitement, that it consists of a violent act and is only possible by a great exertion of energy. On the contrary it very often results from extreme depression. "

So first of all Durkheim questions the links that are supposed to causally connect suicide with high temperature. But even if these links were not questionable, Durkheim shows that variations in temperature would not explain the variations in suicide rate. (p. 110-111) "If temperature were the basic cause of the variations noted, suicide would vary regularly with it. This is not true. Far more suicides occur in spring than in autumn, although it is a little colder in spring... Everywhere the difference between spring and summer is very slight for suicides but very high for temperature. In France the difference is 78% for the one and only 8% for the other; in Russia it is 121% and 4%. Further it can be observed that (p. 111) "suicide... does not reach its height in the hottest months which are August or July; on the contrary, beginning with August it starts to diminish perceptibly. In most cases, likewise, it reaches its lowest point not in January the coldest month, but in December... (p. 113) Moreover if temperature had the supposed influence... the hottest countries should be those most stricken... (but) ... it is least developed in the southern countries of

Europe. Italy has only one fifth as much as France; Spain and Portugal are almost immune.”

Durkheim also shows in a similar way that the sudden contrast between the departing cold and the beginning of the hot season is not an adequate explanation of the variations in suicide. He finally concludes that it is clear that variations in temperature have nothing whatsoever to do with variations in suicidal rate.

The only extra-social factor that Durkheim finds which gives a good correlation with the suicidal rate is the length of the day. The parallelism between these two factors is perfect. Durkheim now proceeds by a type of factor-analysis to determine why and how day length could have this influence. First it is noteworthy that most suicides are committed during, the day and not during the night. The hourly distribution of suicides for Paris is according to Durkheim the following.

midnight to 6	55
from 6 to 11	108
from 11 to noon	81
from, noon to 4	105
from 4 to 8	81
from 8 to, midnight	61

Durkheim gives several other examples of tables applying to other parts of Europe, showing the same thing.

Judging from this table, Durkheim proposes that underlying day length is the factor of intensity in social activity, which would also explain the hourly variations of suicide. It would also explain suicide variation over weekdays. Whereas men show a greater tendency for suicide during workdays than during holidays, for women the reverse is true. Furthermore, it would explain the seasonal variation of suicide just as well as the length of the day did.

So behind the only extra-social factor that seemed to be able to explain suicide, Durkheim finds a social factor ~ social activity. For the purposes of this essay, this is a very significant point. Durkheim has shown that a reductionistic explanation of the social phenomenon of suicide (the society-specific suicide rate) was not satisfactory. If a satisfactory explanation of suicide was going to be provided it had to be purely social or in other words holistic.

The next step that Durkheim takes in *Suicide* is to determine the precise nature of the social factor behind suicide. Why does intensity of social activity show a positive covariation with suicide?

He therefore considers the following social facts about suicide: 1) More Protestants commit suicide than Catholics. 2) 'there is more suicide among., single, divorced or widowed persons than among married persons. 3) In times of national emergency the rate of suicide shows a considerable decline.

Underlying all these social facts about suicide Durkheim finds the factor of social integration and he states this the following way: *Suicide* (p. 208)

- A. Suicide varies inversely with the. degree of integration in religious society.
- B. Suicide varies inversely with the degree of integration of domestic society.
- C. Suicide varies inversely with the degree of integration of political society.

Using social integration as the underlying explanatory variable, Durkheim argues that not only does a low degree of integration produce a high rate of suicide, so does surprisingly enough a very high degree of integration. This explains why 1.) the rate of suicide is higher for soldiers than for civilians and 2.) why the rate of suicide is very high in some primitive societies.

A state of low social integration Durkheim calls "egoism", while a state of very high social integration is called "altruism". The two corresponding types of suicide are referred to as "egoistic and altruistic" suicide.

Societies where, integration is neither high nor low are societies with a low suicide rate.

But there are other facts about suicide waiting to be explained. Persons involved in different types of crises for example economical or familial, show a greater tendency for suicide than other persons.

Durkheim explains this by introducing a second underlying social factor - the factor of social control. He says that just as with social integration, extremely high and extremely low levels of social control tend to produce a high rate of suicide.

He calls a state of low social control "anomy", while a state of very high social control is called "fatalism". The explanation for why persons who are involved in a crisis tend to commit suicide is that they are in a state of "anomy". This is a state where their means are in violent disharmony with their needs, and the controlling influence of the norms of society is not present to modify the individual person's experience of this state - he there-fore commits suicide.

The fatalistic suicide is the suicide of slaves, childless married women and very young husbands. *Suicide* (p. 276)

"It is the suicide deriving from excessive regulation, that of persons with futures pitilessly blocked and passions violently choked by oppressive discipline."

Again a low suicide rate occurs in a society with a moderate level of social control.

Besides the four basic types of suicide - the egoistic, altruistic, anomical. and fatalistic Durkheim recognizes mixed types like egoanomic, where there is both a low degree of social integration and a low degree of social control.

To sum up we can note the following things. Durkheim wants to Explain the statistical facts of suicide i.e. the annual stability of the suicide rate for a certain society. He goes on to show that none of the extra-social factors that had been suggested as explanations for the suicide rate would do, when taken one by one, as an explanation of the stable suicide rate (psychological, biological and so called cosmic factors -properties of the natural environment).

Someone might now object that it is not strange if there is no single extra-social factor which can explain suicide, because there might in fact be no single such explanatory factor. Instead it might be the combined effect of the extra-social factors that produces the suicide rate. But this alternative is not satisfactory to Durkheim. *Suicide* (p 304-305)

"So long as society remains unchanged the number of suicides remains the same. Therefore, all these individual manifestations, however independent of one another they may seem, must surely actually result from a *single* cause or a single group of causes, which dominate individuals. Otherwise how could we explain that all these individual wills, ignorant of one another's existence, mainly achieve the same end in the same numbers?... they are in no, way conjoined; yet everything takes place as if they were obeying a single order. There must then be some force in their common" environment inclining them all in the same direction, whose greater or lesser strength causes the greater or lesser number of individual suicides. Now the effects revealing this force -vary not according to organic and cosmic environments but solely according to the state of the social environment. This force must then be collective. In other words, each person has collectively an inclination of its own to suicide, on which the size of its contribution to voluntary death depends."

Durkheim's point here is that there is no non-spurious covariation between any single tested extra-social factor and suicide which he thinks should have been the case even if it was the combined effect of extra-social factors, that was supposed to be behind suicide. Using the term covariation, makes it easier for Durkheim to maintain that single extra-social factors have to covary one by one with suicide in order to be causally connected with it. If he had used the more technical concept of correlation it is known that the sum of several in-themselves non-significantly correlated factors can itself be significantly correlated with a certain phenomenon. However this would probably not have satisfied Durkheim who was after something intuitively more perspicuous. An explanation of this character, as we have seen, he saw in the social forces of control and integration.

These two social forces, or collective inclinations as Durkheim says, have a reality of their own, which is completely independent of the actual individuals in a society.

The proof of this Durkheim says, is the annual uniformity of effect which occurs irrespective of shifts in generation or other changes in the actual population of a society. These collective tendencies belong to the special sphere of social reality, which is the object of study for the new science of sociology.

So the study of suicide has provided Durkheim with -proof of the validity and necessity of the holistic principle and the existence of a special social reality. For Durkheim, means that only by admitting that there is such a reality can one satisfactorily explain the stability of the suicide rate.

Even if Durkheim, in the explanation of suicide clearly can be said to make ontological claims, the question remains whether they really are necessary for the type of explanation he had in mind. Might one not view perspectives non-ontologically as different organisations of the same reality? In any case Durkheim's theory of suicide is a very good example of a study from the holistic perspective of society and remains to be seen whether suicide could as satisfactorily be explained from a reductionistic perspective.

GEORGE CASPAR HOMANS THEORY OF ELEMENTARY SOCIAL BEHAVIOR

In order not to excessively exhaust any possible readers, we shall make the exposition of Homans' and Spencer's theories somewhat briefer than Durkheim's.

The problem that preoccupies Homans, is the problem of explanation. Sociology is in a state of intellectual chaos according to Homans, because it can provide no true explanations. *Social Behavior* (p. 10)

"Much modern sociological theory seems to me to possess every virtue except that of explaining anything - I am thinking particularly of the work of my colleague and friend Talcott Parsons."

Homans wants to explain social behavior instead of just describing it with a conceptual scheme. *Social Behavior* (p. 10)

"A conceptual scheme is not a theory. A science also needs a set of general propositions about the relations between categories, for without such propositions explanation is impossible."

What sociology needs is not -new empirical data, there is enough already, instead it needs explanations of these data. An explanation to Homans is the deduction of a particular proposition by rules of logical inference from a basic set of general propositions all of the general form "x varies as y".

As what sociology does not need is more new particular or empirical observations in the vein of Berelson and Steiner's book *Human Behavior: An inventory of scientific findings*, Homans starts looking for a set of general propositions from which he could infer the empirical propositions of sociology. *Social Behavior* (p. 12)

"I said earlier that the seeker after explanation would have either to invent for himself or to borrow from others the set of more general propositions from which the empirical propositions, may under given conditions, be deduced. Newton had to invent his own; I have taken the easy way out and borrowed. Faced with empirical propositions from the *Human Group* (another book by Homans) and the large

number of other experimental and field studies of social behavior that have appeared since World War II, I have come to believe that the empirical propositions may most easily be explained by two bodies of general propositions already in existence: behavioral psychology and elementary economics. (Footnote - In saying this I necessarily reject Durkheim's view that sociology is not a corollary of psychology)."

According to Homans these general propositions underlie all human elementary social behavior. They are valid for all human beings, and are therefore propositions about human nature. As the study of human nature is common to all social sciences, it follows that the general propositions of behavioral psychology and elementary economics not only underlies sociology other social sciences like history, sociology but also economics, anthropology, linguistics? and of course psychology. The social sciences are therefore in reality one science where each subdepartment studies a separate aspect of human behavior.

The problem for the social sciences is to show how elementary social behavior combines to form more complex social behavior. *Upptäckt och Förklaring*(p. 92)

Me allmängiltiga satserna... är satser om individuellt beteende, men vad samhällsvetenskaperna ofta önskar förklara är de för sociala aggregat utmärkande egenskaperna. Samhällsvetenskapens centrala problem är fortfarande det som... uppställdes av Hobbes: På vilket sätt skapar individernas beteenden gruppens karakteristika? Alltså det central problemet är inte analys utan syntes, inte upptäckandet av grundläggande principer för de är redan kända, utan demonstration av hur de generella principerna, exemplifierade i många människors och gruppers beteenden, över tid samverkar till att framkalla, upprätthålla och slutligen förändra de mer varaktiga sociala fenomenen."

Thus if the task of sociology or social science is to provide a synthesis this has to be accomplished by showing how complex social behavior can be derived from the properties of and relations between individuals. (The classical reductionistic proposal.)

The area which seems to offer the best opportunities for success in such an attempt is the area of what Homans calls "elementary social behavior". In *Social Behavior* Homans therefore wants to show how a host of sociological findings about elementary social behavior can be explained by deduction from five general propositions of behavioral psychology and elementary economics. The five propositions are the following: *Social Behavior* (p. 51-82)

- I. If in the past the occurrence of a particular stimulus-situation has been the occasion on which a man's activity has been rewarded, then the more similar the present stimulus-situation is to the past one, the more likely he is to emit the activity or some similar activity, now.
- II. The more often within a given period of time a man's activity rewards the activity of another, the more often the other will emit the activity.

- III. The more valuable to a man a unit or the activity another gives him, the more often he will emit activity rewarded by the activity of the other.
- IV. The more often a man has in the recent past received a rewarding activity from another, the less valuable any further unit of that activity becomes to him.
- V. The more to a man's disadvantage the rule of distributive justice fails of realization the more likely he is to display the emotional behavior we call anger.

These five general propositions all embody concepts that are directly translatable to the concepts of behavioral psychology i.e. stimulus, response, deprivation, satiation and reinforcement etc.

Propositions I and II deal with conditioning by positive reinforcement. Proposition III deals with deprivation, and IV with satiation, V finally deals with frustration. The rule of distributive justice referred to in V involves the following idea: A man in an exchange relation with another will expect that the rewards of each man be proportional to his costs - the greater the rewards the greater the costs, and also proportional to his investments - the greater the investments the greater the profits.

With these five propositions behind him Homans undertakes to explain the following social phenomena: Influence, conformity, competition, esteem, interaction, justice, satisfaction, authority, equality, status and innovation.

We shall only take a look at how he deals with one of these phenomena, namely conformity. Conformity to Homans is similarity in behavior. If a group of people find such a similarity in behavior rewarding or valuable, for some reason, a norm will develop. A norm is expressed by a statement made by some members of a group that a particular kind of behavior is one that they find valuable both for themselves and for others to conform to. So conformity first implies the similarity of behavior according to a norm found valuable.

People who find the norm valuable those who conform to the norm with social approval, but they withhold approval from those that will not conform, or even express positive dislike for non-conformists.

But not all people conform to a norm because they find the actual norm itself valuable. They may be negative or indifferent to the norm, but still conform. These people show conformative behavior, Homans says, because they value the social approval of those that value the norm for its own sake, or because they are afraid of the dislike of the same people. So conformity implies similarity in behavior because of social

Thus conformative behavior in Homans's explanation of it is tied to two things:

- I. A certain norm itself.

II. The social approval of other people.

For a potential deviate from a certain norm there are therefore two factors of importance.

I. The individuals degree of liking (or disliking) of the norm.

II. The alternative sources of social approval open to the individual.

If the individual can find no companions in non-conformity, he will probably not remain a deviate, but forget his dislike for the norm and conform to it.

We can see that everything Homans has to say about conformity can be directly derived from his three first general propositions. His analysis does not answer the question why people should find similarity in behavior valuable, it only says that if they do - a norm will develop - and subsequently conformative behavior will also develop. People conform because they either find it valuable directly or indirectly (the social approval of others). As we see exactly what is implied by propositions I - III.

One can of course criticize Homans for leaving out of his theory any statements about what it is people find valuable. Without such statements it will probably be rather difficult to make any -predictions at all with his theory. This can be seen as an essentially holistic critique if one holds that values are extra-individual and social, but one can also criticize him from his own reductionistic point of view for vagueness. He fails completely to provide in any detail the precise mechanism which leads people to the formulated goals of their social environment.

But our aim is not to criticize Homans's particular brand of reductionism, only to show how it is meant to work out in principle. So let us recapitulate. As we remember what worries Homans is the explanatory force of sociological theory. He thinks that by deriving the propositions of sociology from the general propositions of behavioral psychology, he can give the social sciences and sociology in particular a greater explanatory power. His reasons for being a reductionist therefore are primarily pragmatic and not of the partly ontological character that motivated Durkheim's holism. Even if he sometimes seems to make stronger assumptions the following passage is typical of his pragmatism. *Upptäckt och Förklaring* (p. 58)

"Frågan gäller inte huruvida individen är den yttersta verkligheten eller om socialt beteende innefattar mer än individernas beteenden. Frågan är, som alltid, hur sociala fenomen skall förklaras."

Homans thinks that only reductionistic sociological theory shows any promise of such an explanation, but he adds that in principle he sees no reason not to accept a holistic sociological theory of the same explanatory power. The main thing is that the holists start taking explanation seriously. *Upptäckt och Förklaring* (p. 59).

"Svagheten hos dem som här och nu motsätter sig det här redovisade betraktelsesättet är att de, medan de i allmänna ordalag påstår att psykologin aldrig

kan förklara sociala fenomen, inte framlägger några alternativa former av förklaring. De nästa ta problemen med förklaring på allvar. Framför allt bör de sluta upp med att som stöd för sin uppfattning anföra omständigheter som social utveckling, socialt tryck t o m att en social helhet är större än summan av sina delar - den sista frasen är onekligen svar att tillskriva någon bestämd innebörd."

It therefore seems reasonable to view Homans as in principle accepting both a holistic and a reductionistic perspective of social reality, but as choosing the reductionistic perspective because of its greater properties of generalisability of theory or explanatory power. Durkheim on the other hand chose holism because he thought it both ontologically necessary, and better capable of offering an explanation of the social phenomenon (suicide), that he was interested in.

HERBERT SPENCER ,W SOCIAL EVOLUTION

Finally we will briefly take a look at Spencer's theory of social evolution, which, as I see it, is an attempt to utilize both a reductionistic and a holistic perspective.

Spencer wanted to develop a theory of evolution in general and as a part of this theory, he developed a theory of social evolution. He first gives the factors that are involved in and determine social evolution, using a reductionistic perspective. *Principles of Sociology* (p. 8-9)

"Every society displays phenomena that are ascribable to the character of its units and to the conditions under which they exist."

The particular factors that determine social evolution according to Spencer, can be divided into two groups; original and derived factors. They are the following:

Original factors

- I. Extrinsic or environmental factors: Climate, surface, vegetal production and fauna.
- II. Intrinsic (properties of man): Physical traits (racial differences), emotional traits, degree of intelligence.

Derived factors (which society itself has produced)

- I. Modifications of extrinsic factors.
- II. Increasing size of social aggregate.
- III. The reciprocal influence of the units of society on each other.
- IV. Superorganic environment (the influence of societies on each other).

V. Accumulated superorganic products (artefacts, language, knowledge, laws etc.

The science of sociology according to Spencer now has to give an account of all the social phenomena that result from the combined interactions of all these factors. *Principles of Sociology* (p. 431)

"The highest achievement of sociology is so to grasp the vast heterogeneous aggregate, as to see how the character of each group at each stage is determined partly by its own antecedents and partly by the past and present actions of the rest upon it."

Spencer uses a reductionistic perspective to explain social evolution, and his view of society is also basically reductionistic. To Spencer society is a whole which holds its component parts in permanent relations to each other. There is a general persistence in the arrangement of individuals. Only because this persistence exists may one regard society as an entity in its own right. It is also this persistence (by which Spencer means roughly the same as what today is indicated by the term homeostasis), which is the basis for Spencer's utilization of a holistic perspective in sociology. Spencer wants to create a set of what one would be tempted to describe as general system concepts, by which one can describe the character of society, without having to refer to any particular component parts. He wants these concepts in order to compare different societies synchronically and diachronically with each other, in respect to size, structure, function etc.

Spencer therefore develops an analogy between a living organism and society. He does this because he thinks there are great structural similarities (a parallelism in the arrangements of components) between these two phenomena. It is obvious that in developing, this analogy, Spencer is moving from a reductionistic to a holistic perspective. Society is an organism which has properties of its own independent of the actual individuals in society. The analogy shows what properties are common to both the organic and the superorganic (social) body and how these properties are interrelated in both bodies. Specifically Spencer makes the following comparisons:

1. Both show increase in size or growth.
2. Both show increasing integration.
3. Both show increasing structuration.
4. Both show increasing differentiation of structure.
5. Both show progressive differentiation of functions.
6. The functions of both are highly interrelated and become increasingly so by evolution.

Spencer also establishes dissimilarities between society and the biological organism, but these are of interest only within the context of his general evolutionary theory and not at all to us as we want to show how Spencer with the aid of this analogy develops concepts to social phenomena.

It should also be mentioned that Spencer develops some other interesting holistic concepts, such as the differentiation of subsystems within the total system of society and the relations of these systems to phenomena like bureaucracy and centralization. But it would carry to far to deal with these ideas here.

Spencer wants to do two things; to -paraphrase his own words -he wants to holistically describe the life of the whole (society) by aid of the organic analogy, while at the same time describing the life of the individuals and how the life of the whole is determined by these. He uses reductionism to explain the social evolutionary process, while he uses to state interesting correlations between different social phenomena, and in turn later to relate these correlations of definite evolutionary stages.

The differences between holism and reductionism which are emphasized in Spencer's theory are perhaps primarily differences in unit size and only secondarily actual differences of perspective. To Spencer there are definitely no ontological implications involved in the two perspectives. The life of the social whole which is unlike the life of the individuals, is most certainly produced by the combined actions of mutually dependent parts (individuals).

Spencer ends our exposition of holism. and reductionism by showing how the two approaches can be seen as complementary instead of contradictory approaches to sociological theory.

A FINAL APPRAISAL

The last section of this essay is an attempt to summarize and discuss the preceding exposition.

PERSPECTIVE

I have proposed that some of the differences between holistic and reductionistic theories can be explained through the notion of an underlying perspective. A perspective is seen as a set of assumptions about the nature- of certain empirical data and a way of organizing these. A perspective can be linguistically codified by the descriptive units and explanatory concepts of the conceptual framework chosen by a certain theory.

We have exemplified three different reactions to perspectives. Durkheim only seems to be aware of his own perspective and more or less blind to the reductionistic alternative. _Homans is aware of both the reductionistic and holistic perspective but chooses to ignore one perspective on pragmatic grounds. Spencer finally is aware of both descriptives and attempts to utilize them both by developing a total perspective which includes them both.

EXPLANATION AND DESCRIPTION

The difference between explanation and description is not absolute. Descriptions can be given on different levels of abstraction. One level being explanatory only in relation to the next. This is what is meant by the statement that the difference between explanation and description is a matter of degree. The statement does of course not imply that one level of -description can be done away with and reduced to the next. That is controversial and part of the subject matter of this essay.

However, the recognition of the relativity of description and explanation in no way invalidates the division of the concepts of a particular theory into descriptive and explanatory ones. In fact this seems to be very helpful for the comparison of theories that are supposed to handle roughly the same subject matter. We will therefore make use of this distinction in the following passages.

UNITS, DESCRIPTIVE AND EXPLANATORY CONCEPTS

We have argued that one's perspective determines one's choice of units and concepts. Durkheim's units in *Suicide* are societies and collective currents manifesting themselves in statistical facts. Both his descriptive concepts (egoism, altruism, anomie and fatalism) and explanatory concepts (social integration and control) are holistic.

Homans's units are individuals and their properties. Also in the choice of concepts Homans's trend is clearly reductionistic. The explanatory concepts are from behavioral psychology (stimulus, response, deprivation, satiation and reinforcement etc.). The descriptive concepts (influence, conformity, competition, esteem, interaction etc.) present a more complex problem. They seem to refer to properties of social aggregates, but in fact of course the whole purpose of reductionism is to show that they do not and that they really refer to sum-totals of individual properties. We may therefore I think also call Homans's descriptive concepts reductionistic.

Herbert Spencer, in accordance with his more inclusive perspective, chooses both individuals and societies for his units. But as we have seen he chooses one type of units for explanation and one for description. His explanatory concepts (climate, surface, physical and emotional traits of man etc.) are reductionistic while his descriptive concepts (size, integration and structuration etc.) are holistic.

MOTIVES AND REASONS

We have already seen that by a kind of debunking -procedure, we can ascribe the adoption of holistic or reductionistic approaches in sociological theory to the influence of a certain type of perspective. But usually this perspective is not the conscious motive for the sociological theorist. He usually gives other more or less conscious and rational reasons.

ONTOLOGICAL CONSIDERATIONS

This type of consideration seems to have been the most important for Durkheim, it leads him to accept a weaker form of ontological holism. Rousseau exemplifies a stronger type.. (See -p. 8)

For Spencer ontological considerations do, not seem to play any role at all. Whether ontological assumptions play a role for Homans is uncertain. All of his explicitly given reasons for reductionism are of a pragmatic type. 'But at times he seems to give vent to more than pragmatics. He seems to think that social reality really is the way the reductionist pictures it.

Even if Homans does not make explicit ontological commitments, there can be no doubt that reductionists in many cases do make definite ontological commitments. Social reality is an abstraction, the only thing that really exists are individuals and their properties.

EPISTEMOLOGICAL CONSIDERATIONS

A more important type of argument for the reductionist than the ontological is the epistemological. As we remember this argument stated that all meaningful scientific statements should in some way be derivable from statements of direct empirical observation. The directly empirically observable was taken to be individuals in interaction and their properties. The argument thus must conclude in reductionism.

Homans does not make immediate use of this argument, but many other reductionists do, especially those sociologists that have been influenced by logical empiricism.

Neither Durkheim nor Spencer- seem to be aware of this argument.

THE INDEPENDENCE OF SOCIOLOGY

For Durkheim the thought that sociology needed its own subject matter to be an independent science provided powerful normative motivation for holism.

Homans who wants a unified social science thinks that the so called independency of sociology is one of the things that is wrong in the first -place. Thus the normative motivation completely falls, or rather it works in the opposite direction towards a non-independent sociology.

Spencer would on this issue probably side more with Homans than with Durkheim. This is clear, I think, if we remember that Spencer was concerned with a unified philosophy of evolution and that he considered sociological evolution as only a part of this.

PRAGMATIC REASONS

Pragmatic arguments in support of holism or reductionism are arguments that do not purport to prove the inherent necessity of either view. A pragmatic argument supports one or the other approach to sociological theory on the grounds that it better than any other approach can meet certain conditions or criteria that are set up for sociological theory. So a pragmatic argument for a theory does not disqualify the competing theories in the same fundamental way the ontological and epistemological arguments do. A theory can always come up for reconsideration when its failure is pragmatic.

One can divide pragmatic considerations into two types. The first type is based on traditional methodological requirements for all scientific theories. Such requirements are: Economy, coherence, exhaustiveness; correlated to these three are the simplicity, the explanatory and descriptive power of the theory.

The second type is concerned with the practicality and the feasibility of the theory.

The pragmatically inclined social theorist could therefore agree that there are different perspectives on social phenomena and that different theories based on these perspectives can be created. But such concessions are not decisive. What is decisive is whether the theories in question meet or do not meet the formal criteria which the theorist has recognized. One can accept and reject theories on the basis of those criteria independently of any other considerations.

For Homans pragmatic considerations are the main reason for reductionism. Reductionist sociology has greater explanatory power. It can explain more single scattered findings than any other approach to sociology. It is the most exhaustive and economical theory in sociology. It even offers hope of a unified theory for all social sciences.

For Durkheim pragmatic reasons do not play the main role, but he still considers it important to adhere to the canons of scientific methodology. The notion of explanatory power is important for Durkheim in his attempts to provide an adequate explanation for the stability of the suicide rate. But the question whether this type of explanation increases the total -possibility for explanation within sociological theory does not seem to have concerned Durkheim too much. After all as he had ontological reasons for -believing that he was doing the right thing, a pragmatic reason could never play a decisive role.

Finally Spencer at least implicitly seems to have considered the notions of descriptive and explanatory power, when he introduces reductionist notions for explanation and holistic notions for a better description of all facets of a social system.

PRACTICALITY AND FEASIBILITY

Considering pragmatic reasons of the second type, questions of purpose and available techniques come into play. *Purpose* does not indicate the theoretical notions of explanation and description which we have touched on above. Rather we mean practical purpose in some sense. Would it for example for -pedagogical or

political purposes be more desirable to use a reductionist rather than a holist approach?

In neither Durkheim's nor Homans's or Spencer's theories do such considerations of practical purpose play any great part. Spencer is concerned with purpose but as we have seen it is a purpose of a more theoretical nature. He wants to compare different societies in respect to certain aspects of social evolution. However Durkheim's wish to make sociology an independently justified science perhaps qualifies as such a non-theoretical purpose.

Finally the question of available techniques comes into play. Would it be too complicated to look at social reality as an interaction between a large number of single individuals? What does computational dataanalysis mean in this respect? Is it possible to make really precise predictions with a holistic approach? To what extent has modern systems-analysis managed to make new holistic techniques available?

In the days of Durkheim and Spencer, research techniques were not very developed, and that very fact of course prevented considerations like these from playing any major part in their reasoning. But it should be pointed out that it was thanks to the statistical inductive method that Durkheim was able to note the collective suicide rate. This of course does not mean that statistical induction per se necessarily is holistic.

On the other hand, the absence of computers and analysis techniques for handling large amounts of data, would tend to support a holistic rather than a reductionist approach.

Homans briefly considers this aspect of the question, when he writes: *Upptäckt och Förklaring* (p. 93-94)

"Vad beträffar det ytterst svåra syntesproblemet, problemet med att förklara de möjligtvis divergenta verkningarna av det under lång tid fortgående intrikata växelspelet mellan individer och grupper, har den snabba datamaskinen kommit oss till hjälp... den kan inte ställa de rätta frågorna - den uppgiften ankommer fortfarande på oss - men svaren, i den man dessa grundar sig på räkneoperationer, kommer datamaskinen att ge oss med en hastighet som ingen människa kan mäta sig med."

SUMMARY TABLE

As an appendix I include a table showing the positions of Durkheim, Homans and Spencer in relation to certain key-concepts.

	Durkheim	Homans	Spencer
PERSPECTIVE			
Holism	X	?	X
Reductionism		X	X
Other			
FUNDAMENTAL UNITS			
Social	X		X
Individual		X	
DESCRIPTIVE CONCEPTS			
Holistic	X		X
Reductionistic		X	
EXPLANATORY CONCEPTS			
Holistic	X		
Reductionistic		X	X
REASONS			
Ontological	X		
Epistemological		?	
Explanatory power	X	X	X
Descriptive power			X
Normative	X		
Practical feasibility		X	?

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