

MODULE 2.3

CLAIMS TO KNOWING

Method and the SQR

1. Achievements

Even though it would be critiqued later on, the influence of the SQR on the field has been huge. It has also been enduring. It still has the capacity to make signal contributions. In my view it was the major, the defining event in twentieth century geography. Among other things, it made geographers more critically aware of method and its importance to the development of a field and also much more aware of the importance of theory.

With respect to method the subjectivity of map comparison – a major form of ‘analysis’ prior to the SQR – compared poorly with the seeming objectivity of a correlation or regression coefficient. Degrees of association between variables could now be compared accurately rather than the sort of intuitive response one might get from a map comparison: ‘Well, the relation between distribution A and distribution B looks as if it is closer than that between distribution A and distribution C. What do you think?’ Statistical analysis also allowed one to move beyond the simple bivariate case to which map comparison had restricted people. One could ‘hold variables constant’ in order to assess how much of the variation apparent in a geographic distribution was due to variable X, Y or Z. Simple statistical analysis also opened up the way to cumulative findings and the sense that the frontiers of ignorance could be pushed back. Gravity models could be decomposed in various ways, for example. In a famous instance, Gunnar Olsson showed that the distance exponent for migration to smaller cities was considerably higher than that for migration to larger cities. So our knowledge of the geography of migration progressed.

A second important effect of the SQR was that it made geographers much more aware of the importance of theory. The initial impact of the SQR was in the identification of pattern. But this in turn raised questions as to *why* particular patterns were apparent and *how* they had come about. This encouraged geographers to start thinking about process and its relation to pattern. Some of the early theorizing was internal to the field in the form of ‘spatial processes’ like

migration and industrial location that could conceivably be linked to geographies of population change and shifts in industrial location respectively. Pattern was linked to movements. In this way theory began to loom larger in the geographer's consciousness. In comparison to what had gone before, the very idea of a book entitled *Theoretical Geography* was remarkable. Not much later, cognate fields, like geology, economics, psychology (with behavioral geography) were trawled for insights. Furthermore, as quantitative geographers started to recognize the significance of theory, so conceptual precision and interpretation became more important. What exactly was the meaning of what they were measuring? What did accessibility consist of? What was the meaning of the distance exponent in the gravity model?

Much of the success of the SQR and its enduring validity derives from its effect on pattern identification. This resonated with Schaefer's original call for the identification of morphological laws in geography. Important watchwords were spatial organization and spatial order: the idea that geographies were orderly if only we knew how to look for that order. Quantification provided a necessary means to that end. It wasn't just a matter of providing results that were objective because they were replicable, though this was important. Statistics also allowed the breakdown of distributions into different components, like scale components, or regional trends (through the use of trend surface analysis). Factor analysis or principal components allowed the extraction of common dimensions of (geographic) variation from large numbers of variables. Factor analysis could be, and was, applied to connection matrices, such as those indicating airline routes between cities in order to derive different aspects of network pattern.¹ Movements such as migrations might be broken down by demographic categories (e.g., race, gender, occupation) and the distance coefficients from resultant gravity models compared. There was some extraordinarily innovative work in this area, as in (e.g.) Fotheringham's maps of gravity coefficients or Peter Taylor's work on the relationship between a country's shape and the distances over which people migrated (much longer distances are possible in Chile than in Paraguay, for example, even though they have similar areas (INSERT)).

¹ For some stimulating examples of such applications, see pp., 320-24 of P Haggett, A Cliff and A Frey, *Locational Methods*. John Wiley; New York 1977.

Quantification also gave new force to applied geography. Instead of simply mapping land uses, geographers could now recommend particular locations as optimal from the standpoint of, for example, minimizing the total distance to all the people to be served. Linear programming, in the form of the transportation problem, could now be used to allocate children to neighborhood schools so as to minimize the school districts transportation expenses.

2. Models

The vehicle of investigation in the SQR was the model. This continues down to the present day. Three broad types of quantitative model can be identified: empirical, theoretical and normative.

2.1 *Empirical Models*: The aim of empirical models is the quantitative evaluation of empirical outcomes. This may involve:

- Recourse to the most simple of statistics as in the use of means and variances to establish or confirm some generalizations about magnitudes and the extent of variation. (e.g.: the increasing wage gap; interregional convergence of per capita incomes; simple tabulations of mean incomes by race group in South Africa; frequency distributions of employees by size of family group present in the workforce: number of employees with 4 relatives in workforce, 3, 2 , etc.; evaluations of settlement dispersions – clustered, random or uniform; the use of segregation and localization indices)
- Multivariate analysis in which variables are held constant in order to isolate some empirical regularity. This can range in practice from cross-tabulations (e.g. % voting Democrat by race, income, gender, age; change in property values subsequent to busing for houses with different numbers of bedrooms) to multiple regression (e.g. crimes per 1000 as a function of city size, % unemployed, % black, etc.).

2.2 *Theoretical Models*: In theoretical models empirical expectations are *deduced* on the basis of a closed system and assumptions about the actors: preferences, budget constraints, technologies

available, etc. These are common in economics and during the SQR urban and economic geography tended, and still tend, to model themselves on that field. Examples include:

- i) Alonso's model of urban land rent: land rent, income and population density geographies are deduced on assumptions of: a city with a population that is constant in magnitude and in its income distribution; employment located at the city center; tradeoffs between transportation costs and residential space preferences which vary across income groups.
- ii) central place theory. Assumptions about the distribution of population, shopping trip behavior, threshold markets for different retail goods or services, and the distances over which consumers are willing to travel in order to purchase a good or service generate a pattern of central places of different sizes, larger central places separated by longer distances than smaller central places, shopping trip distances related to the size of central place and so on.

Theoretical models are typically deductive in form. Assumptions are made about spatial behavior, the context in which the behavior is unfolding and then deductions are made about resultant spatial patterns. They are typically tested using regression. A weakness, however, is that the coefficients resulting from the regression, typically vary over space and time, suggesting that the deductive model provided an incomplete specification of all the relationships necessary to explaining a particular pattern.

2.3 Normative Models: In normative models, desired location-allocation outcomes are identified on the basis of certain restrictive assumptions regarding economic choice, prices and adjustment to prices; e.g. people will want to patronize the nearest outlet for some product.² An example is the linear programming model in which the allocation of resources that would satisfy some objective function like maximizing profits is deduced. One particular application of this is known as the transportation problem: given a set of demands for a product at a set of locations and a set of supplies at a, not necessarily exclusive, set of locations what should be the allocation of supplies to demands in order to minimize total transportation costs? The normative pattern then established can

² Not necessarily true, given the fact that many shopping trips are multi-purpose, so rather than visiting a pharmacy close by, the person who also needs groceries will pick up a prescription at the pharmacy center in the supermarket.

then be compared with what has actually transpired or provided to some client as something they should consider adopting.

3. Some Difficulties with Quantification

3.1 *Official Statistics*: An interesting point is that many of the objects we encounter in human geography are already quantified: e.g. census statistics, prices, rents, wages, crime statistics, housing starts, local government expenditures, taxes, migrants, refugees. On the other hand, we have to ask 'for who are these statistics, these quantifications, useful?' They may be useful for the purposes of the people collecting them but not for us as geographers. Often the sorts of qualitative variations we might be interested in as human geographers are overlooked. For those studying the geography of crime, what is really a petty crime may be counted along with serious crimes in order to pad the figures prior to a funding request by the Police Department! Whether pupil-teacher ratios provide useful comment on inequalities depends on the qualitative characteristics of the teachers (and of the pupils as well!). Likewise consider all those cases where what should be incorporated into a measure is left out simply because it is difficult or even impossible to give a quantitative measure to it: e.g. the inadequacies of measures of gross national product. And it goes without saying, the simple availability of quantified data may encourage quantitative analysis at the expense of the qualitative; and in addition, the neglect of problems for which quantified data are not readily available.

Reliance on official statistics, moreover, means using what are often very coarse spatial breakdowns. Comparing central cities in the US – for which there is a profusion of data – is hazardous simply because some central cities, in virtue of their abilities to annex, account for a much larger proportion of a metropolitan area's population than in other cases: Columbus, for example, is bigger than Boston! Once one gets into any form of comparative study across different countries, of course, the problems quickly multiply. What counts as a city will vary. Occupational classifications will vary. What counts as a migrant will vary since if one country uses very small data collecting units and calculates migrants as those who were born in some other place, then migration will appear much more substantial than in the case of a country which uses rather coarse

data collecting units. How does one go about comparing distributions across the states of the US with distributions across French departments or British counties? Answer: Not easily.

3.2 *Attributing Causality*: The expression of relations in quantitative terms -- $Y = f(X)$ or $Y = X_1 + X_2 + X_3$ -- tells us *nothing* about cause. The equals sign connotes nothing in and of itself about what produces what; the two sides of these expressions could be interchanged without any loss of meaning [e.g. the gravity model: $I_{ij} / P_i P_j = f[D_{ij}]$ but why not the other way around or $P_i P_j = f[I_{ij}/D_{ij}]$?]. Even if the variables are given some ordering in terms of time -- e.g. $T_2 = f(T_1)$ -- mathematics can't confirm a causal relation, unless, of course, we have reasons *theoretical* nature suggesting that T_1 is a necessary pre-condition for T_2 . So mathematics is no substitute for careful theorization.

Another way of saying this is that while the language of mathematics is good at expressing the *effects* of the exercise of causal properties and mechanisms, it can't help us in understanding why these effects happen. It can express effects since these can often be assigned a quantitative measure: e.g. distance migrated, number of times divorced, number of school years completed, family size; hence the concept of 'variable'. But other languages are needed in order to identify the mechanisms responsible. So we need to be alert to the fact that as concepts 'variables' are indifferent with respect to cause and only register change, not what produces change. In other words they register the *effects* of causal properties: e.g. the effect of the power to vote when it is exercised, or the effect of the power to drive to a shopping center when it is exercised.

This means that quantitative analysis is very good at identifying and describing patterns. As such it remains a crucial element in the geographer's kitbag of tools and one that we neglect at our peril.

Critiquing 'Positivism'

It is interesting to note that when the various critiques of the spatial-quantitative work started to emerge in the 'seventies, leading the charge were some people who had been closely associated with the SQR and made notable contributions. These included Torsten Hagerstrand, David

Harvey, Gunnar Olsson, Allen Scott, Mike Webber and Julian Wolpert. So to an important degree the revolt was from within, though it is important to point out that a lot of those associated with the SQR continued to remain in that camp and have done so right down to the present day. These include people like Brian Berry, Les Curry, Peter Gould,³ Peter Haggett and Waldo Tobler.

The critique required a coherent philosophy of science to attack; something that had not been self-consciously identified by the protagonists of quantitative analysis in geography. So one that would match significant aspects of their assumptions was created. Henceforth, spatial-quantitative geography would be defined as ‘positivistic’ after the term ‘positivism,’ and ‘positivistic’ would become a dirty word. It is important to note, however, that to the extent that pre-SQR geography followed methodological prescriptions, they also were positivist in character. Observation was prioritized over theory; in fact the very idea of theory would have been looked at skeptically. Likewise, geography had to do with facts and not with any evaluation of the world we lived in. What the SQR did was make these fundamental assumptions more clearly apparent, in part because of the way it foregrounded, for its own purposes of distancing itself from what had gone before, questions of method.

In talking about positivism we can identify some central claims. There are three that we should bear carefully in mind. Abstractly stated they are:

- i. *the separation of facts from theories*: the belief in the possibility of a theoretically-neutral observation language;
- ii. *the separation of facts from values*: the belief that science can arbitrate about facts (whether something exists or not, how it behaves) but not about values (whether something is good or bad, beautiful or ugly, desirable or undesirable, stimulating vs. tedious, etc.)

³ Until his recent and untimely death (2000).

- iii. *the unity of method between the physical and social sciences*: more accurately, the belief that natural science method is applicable to the subject matter of the social sciences, and that social science, like natural science, can arrive at universal laws.

To take each of these in turn and to recount some of the criticisms that were made, or have been made since:

i) The separation of fact from theory allows a privileging of observation as the decisive arbitrator of truth; theory then works on observations and tries to order them in an explanatory fashion, as in explaining one set of observations or events in terms of another. To rebut this view is not difficult. We can only differentiate objects one from another in terms of concepts and sets of concepts, as in classificatory schemata and interpretive frameworks. Observation is impossible without concepts as to what exists. We can't be physicists, sociologists, workers without some set of concepts into an understanding of which we have been inducted. Without concepts we wouldn't know what to look for, what to observe: as Sayer says, a fact without some conceptual preconditions, without some interpretation, is meaningless. So whether we are aware of it or not, we inevitably make use of concepts in our work. They may be ideas into which we have been socialized from childhood, ideas we have picked up in the media; in other words, 'commonsense.' The problem with anything of which we are unaware and that creeps into our thinking when we make our observations as to what to observe, what is being observed, is that it is composed of ideas, concepts, which we have not critically examined.

A consequence of the privileging of observation in positivist method is what is known as the humean concept of cause, after the philosopher David Hume. According to Hume, a necessary, but not sufficient condition for attributing causation was what is now known as a constant conjunction of events. An event X is always accompanied by an event Y; the absence of X is always accompanied by the presence of Y. In this way Hume sought to link causality to observable events and to avoid reference to the unobservable. In its origins this was designed to foreclose reference to divine intervention; a major object of animus for the Enlightenment

philosophers, of whom Hume was one. But it also precluded reference in causal accounts to other conditions which were either not observable or not linked through so-called correspondence rules to what was observable.⁴

ii) Facts vs. values: Facts are always facts *for somebody*. As Sayer points out in Chapter 1 of his book *Method in Social Science*, practice is part of the necessary context for knowledge. Practice is assessed in terms of its results. "Given a set of intersubjective meanings and, perhaps, speculations based on those meanings, do they actually work for me?" In other words, "do they help me realize my material interests, my practical purposes, my needs? Are these facts 'good' or 'bad' for me?" (for further and more detailed discussion of the fact-value distinction see Appendix C).

By the same token the interpretive frameworks through which we identify 'facts', are value laden in the sense that they reflect practical intent. For the most part we're not aware of this fit between 'knowledge' and interests, until that knowledge is challenged by some group for whose interest it does not work: a challenge from feminists, for example, regarding the explanation of why women don't engage more in wage work – it is not so much that they prefer to be fulltime home makers, as that all manner of obstacles have historically been put in the way between them and waged work.

In a sense the positivists bias the fact vs. value question by the way they phrase it. Instead of asking *for whom* is such a social object good or bad, they seek some absolute standard of value which is impossible to arrive at. The obvious reason it is impossible is the fact of disparate and antagonistic material interests: silences and emphases in knowledge may be for men but not for women; for one generation of scientists but not for a succeeding one, for capital and not for the working class, for whites but not blacks, and so on.

⁴ For example: 'Economic development' is not observable but it has various observable indicators like the mortality rate and productivity per worker to which it can be linked.

The fact / value issue was brought vigorously to the fore by Harvey in 1973 in a chapter in his book *Social Justice and the City* that attacked what he called 'status quo theory.' According to Harvey, "... social science formulates concepts, categories, relationships and methods which are not independent of the existing social relationships. As such, the concepts are the product of the very phenomena they are designed to describe." (p.125) The result was status quo theory or theory which to the extent that it informed public policy, was bound to reproduce the world as it was – i.e. the 'status quo' – with all its defects as well as, presumably, its strengths. And to the extent that its advantaging and disadvantaging accrued to different fractions of the population, then it would support those benefiting from the status quo and work against the interests of those disadvantaged by it; it would be a theory for some and not for everybody.

From Harvey's Marxist standpoint, status quo theory described capitalism in terms of the categories and concepts in everyday use, which people called on in their everyday practices and which reproduced the existing power relations. These were concepts like profit, wages, unemployment, monopoly, competition, rent, price and so on. Policies based on these concepts and the theories that took them for granted in an effort, say, to reduce unemployment, would simply reproduce it. They might move unemployment around or make it fall on different fractions of the population. But to the extent that the right of people to earn a profit was respected, to the extent that profit was a taken for granted category, then unemployment would have to occur somehow because the profitability of business depended on it. Capitalism, however, could be seen differently; i.e., through concepts that while a defensible description of the capitalist world, would not reproduce capitalist relationships. Thus Marx challenged the right to earn a profit, setting the category 'profit' by the side of his own category 'surplus value'. For Marx, surplus value was the value of the extra product appropriated from the workers over and above the value of the wage paid to them. In this definition, therefore, profit was unpaid labor! This described the world not from the standpoint of the status quo but from those disadvantaged by it.

iii) Naturalism: The crux of the issue here is the possibility of universal laws of human behavior analogous to universal laws of physical behavior: the behavior, that is, of atoms, chemicals, chromosomes, etc. If we can assign to social objects the same properties as we assign to non-social objects (an ontological assumption) then universal laws of social behavior are, in principle, possible. However, the crucial ontological assumption is not satisfied. While in the case of physical science meanings are purely labels, in social science meanings are both descriptive and constitutive of what objects are. We gain some insight into this problem through the idea of the self-fulfilling prophecy. But we don't need social scientists 'contaminating' their object of study to arrive at this conclusion. And this is because people are self-interpreting objects who draw upon an existing body of inter-subjective meanings to formulate new ideas, test them to see if they work, and so create new facts, new relations, which didn't exist before. So laws of behavior cannot be universal -- and the reason for this is that we're not dealing with *behavior!*

Examples of how 'laws' change come from the study of voting behavior, where social groups may change their party political allegiances. Until the 1930s blacks in the US always voted Republican. But the coincidence of severe depression during the '30s, with the free market policies of the Republican Party contrasting with the welfare state policies of the Democrats, prompted a reassessment by blacks of their reasons for voting the way they did. Their old inter-subjective meanings were no longer practically adequate. The Republican Party may have been the party of Lincoln at one time but by the 1930s Republican policies could no longer be seen as postulating a set of meanings and practices in black interests.

The difficulties of identifying universal laws of human behavior are underlined by the seeming difficulty of replicating results in social science. What we are confronted with are correlations, regression coefficients etc., which seem to vary by study area or study period. The belief is that if we could only control all possible 'variables', then these variations in results would be eliminated and we would arrive at the holy grail of universal laws. What this overlooks is that social

contexts and people, by their very nature, change: we cannot hold constant what has yet to come into being, for example, or which exists someplace that has never been studied!

Post-Positivist Method

Recognition of weaknesses in existing understandings of appropriate method led to a search for alternatives. What I want to do in this section is illustrate these with reference to two quite different approaches: critical realism and what I am going to call, for want of a better blanket term ‘discourse analysis’ – i.e., those ideas coming out of that cluster of approaches comprising the various ‘posts’: post-modernism, post-structuralism and post-colonialism. The module will then conclude by identifying some enduring issues in method.

1. Critical Realism

Critical realism (henceforth CR) amounted to a critical riposte to the methodological assumptions underlying the positivism that came to characterize mainstream social science, including geography. It emerged within philosophy and its main channel into geography was the geographer Andrew Sayer. Its peak influence was probably in the ’eighties but its prescriptions had lasting effects on the work of a number of human geographers including Doreen Massey and Michael Storper. It also had a more general and superficial influence through the widespread adoption of couplets like ‘necessity and contingency’, ‘extensive and intensive methods’ and a suspicion of empirical generalization. On the whole it did not sink deep roots into human geography method but it illustrates some of the critical concerns of people in the ’seventies and one approach to resolving those concerns.

A central critical focus of CR was the empirical regularity: some association between observable events, like migration and intervening distance, or proximity to sources of air pollution and rates of pulmonary disease. The argument was that the social science search for order revealed empirically in the form of patterns, including associations between variables, was not a sound basis on which to build explanatory understandings. The empirical focus led to a derogation of the role of theory. Theories were seen as built on facts, and the facts were revealed through

enduring empirical regularities (see Appendix A on Empirical Regularities). They subsequently served as a way of ordering observations in what Sayer called ‘the ordering framework’ approach to theory. This, of course, was built on the, usually unacknowledged, assumption that facts were pre-theoretical: that objects, relationships, could be recognized without any *sense* or *understanding* of what one might be looking for. CR argued strenuously that they were *not* pre-theoretical. Furthermore, the belief that they were, licensed the unconscious use by the investigator of all manner of ill-considered ideas about the world: ideas absorbed from the media, from early schooling, or what is often referred to as ‘common sense.’

As an approach to explanation mainstream method was found to be lacking. Explanation required an attention to mechanisms, whereas identifying empirical regularities merely isolated what had to be explained. Explanation also required attention to the fact that mechanisms worked in open systems and this affected their empirical expression. Paper is susceptible to burning when making contact with a flame (the mechanism), but whether it actually burns or not depends on whether it is dry or not. Understanding pattern required, therefore, both an understanding of general processes and of the contingencies of time and place which affected the empirical expression of those general processes. Neither of these were strongly affirmed in mainstream approaches.

Understanding mechanisms required a conceptualization of the *causal properties* of objects: what they were capable of doing – their causal powers, as well as what forms of change they were liable to – susceptibility to disease, bankruptcy, or whatever. Objects had causal properties in virtue of their *structure*. The fact that a bridge has *the power* to support a weight depends on its structure. Without wings and a tail, airplanes are *unable* to fly. When we turn to social objects, like people, firms, or state agencies, the structures in virtue of which they have certain causal properties are social in character: there is a relationship between social structure and the

causal properties of those comprising a social structure. In the family wife, husband, children, have the powers and liabilities they do as a result of their relationships one to another (the structure of the family) as they are defined by custom and law; families typically are characterized by a division of labor, for example; parents have the power to tell their children what to do, within the limits of the law; historically husbands exercised a power over the activities of their wives through the fact that they were the wage earners. In a capitalist society, people are *liable* to unemployment, but they also have the *power* to change employers (something not possible in feudal times when immediate producers were tied to a specific manor). In the modern division of labor between firms, firms are *enabled* to specialize; but they are also *liable* to the disruption of their operations as a result of their dependence on other firms for their components.⁵

Having said, however, that people are liable to unemployment, does not tell us who *will* be unemployed. Likewise, the fact of the division of labor does not tell us what the precise contours of the division of labor will be. Both of these are, in the parlance of CR, contingent matters. It is possible that the unemployed will be African Americans, the young, and those approaching retirement, but it is not necessary. In some firms, retaining African Americans and dismissing whites may be seen as what one has to do in order to avoid being accused of racial discrimination in employment. Whether or not a person approaching retirement gets fired because of the added health insurance premiums the firm has to pay for her, depends on how invaluable her labor is to the firm. Likewise the lines along which firms specialize depend on contingencies like technology: what aspects of the labor process it brings together in the same machine and what aspects it separates, for example.

⁵ Note here that the approach to theory is quite different from mainstream understandings. Instead of ‘theory as ordering framework’ it is a matter of ‘theory as conceptualization.’ Asking questions about the nature of the object and why it has that particular nature, that particular cluster of powers, needs and liabilities; questions, the answers to which, are likely to lead to an understanding of underlying structures. Simply by asking what are the necessary conditions for the existence of objects of interest we can make considerable progress in working out the causal structure of the systems in which they exist.

Empirical regularities often relate some outcome or event to a condition of that event occurring rather than to what actively produces, changes things, changes geographies. To take the example that Sayer discusses in the article of his that you were asked to read: Employment change in Britain shows some relationship to what he calls ‘assisted area status.’ In other words, there seems to be some tendency⁶ for employment to increase in those parts of Britain where new investment is eligible for financial assistance from the government.⁷ But whether or not this condition actually made a difference to the investment decisions⁸ of firms depended on the firms needs and powers; i.e., on their ‘causal properties.’ Firms requiring highly skilled labor would be unlikely to take advantage of government assistance since the areas where such assistance was available would typically lack such labor. Firms whose labor processes were fairly simple and easy to learn, on the other hand, might be attracted since, given another contingent condition of stiff competition from firms in less developed countries, they might see the low cost labor reserves available in the assisted areas as vital to avoiding bankruptcy.⁹ In fact some observers suggested that employment in the ‘assisted areas’ would have grown anyway given that particular conjuncture of contingent conditions and mechanisms, and regardless of whether or not financial aid from the government was available. So investment decisions have to be understood in terms of the causal properties of firms; what they need, what they are susceptible to (bankruptcy); but also what they are *able* to do (their causal powers). It is no accident that the firms establishing new plants in the assisted areas tended to be multi-locational. The new plant, in other words, would be a *branch* plant. Single plant firms closing down a plant in one part of the country and opening up again in the assisted areas would be very unlikely simply because of

⁶ ‘Some tendency.’ Empirical regularities are often quite weak. This testifies to the difficulty of holding other variables constant, either for want of appropriate theory, lack of data, or running out of degrees of freedom as one includes more and more variables.

⁷ At least in the period studied.

⁸ And note how an investment decision is always a location decision.

⁹ Note that ‘liability to bankruptcy’ is another causal property, as is ‘the need for low skilled labor.’

the huge risks involved: having to recruit a new labor force, forge links with new local suppliers, without the offsetting advantage of a plant elsewhere that is already operating profitably.

This suggests a different approach to causality from that which depends on the isolation of empirical regularities defined across numerous observations. As Sayer says, causality has nothing to do with the number of times an event is observed to occur. Single events, like the destruction of the World Trade Center, for example, can be explained just as easily as repetitive events like unemployment or gentrification. By the same token, empirical regularities like the expansion of employment in assisted areas and its decline elsewhere are the result of many, many separate events, each with their own conditions in causal mechanisms (or necessary conditions) and contingent conditions. Empirical regularities tear individual observations out of these causal contexts and treat as similar what are actually very different events. The fact that parameters vary from one gravity model to another, for example, should alert us to this (see Appendix B on the problem of decontextualization).

These arguments lead Sayer to make an important distinction between what he calls *intensive* and *extensive* methods in social science and, therefore, in human geography. Extensive methods focus on the identification of patterns through the standard array of statistical methods: correlations, indices of segregation or localization, regression coefficients, variances and so on. The focus is on numerous cases of some event. Validation is secured by replication of the study: more gravity models, studies of the localization of industries in other countries, for example, or at other times. One of the accomplishments of the SQR, therefore, was to considerably widen the ability of geographers in this regard. Extensive methods tend to be weak in explanatory power, however.

The goal of intensive methods, on the other hand, is to examine how a process works in a particular case. This involves an examination of the particular structure of social relations in virtue of which agents – people, firms, state agencies, for example – have the causal properties they do. So state agencies have powers and also responsibilities that are given them in virtue of constitutional and statutory law. Firms in a division of labor are both empowered by that division of labor as well as limited by it, as we saw. The emphasis, then, is on identifying the causal groups through which its members are enabled and / or constrained to do certain things, produce certain sorts of change in the world. The forms of their actions, and the effects that they have, however, is a contingent matter: it depends on the circumstances of time and place; the geohistorical conditions from which empirical regularities tend to abstract. So intensive research is also contextual research.

The methods of intensive research are different. They involve the investigation of particular agents, identifying the particular structures of relations – family, division of labor, patriarchy, state, for example – in which they are embedded and which give them their particular causal properties. They also involve inquiry into the contingent conditions that mould particular strategies of (e.g.) firm specialization, investment, location. Such research is likely to give considerable importance to the unstructured interview in which one explores with the interviewee, the particular conditions that empower and limit them, and the difference that their geohistorical context makes. The investigator brings an immersion in social theory and knowledge of other cases to the interview and uses them to provide an interpretive framework for the respondent's answers, but at the same time adjusting the interpretive framework in the light of the unexpected. The unstructured nature of the interview, allowing the respondent to enlarge on topics to which reference has been made and which might initially seem irrelevant, is designed exactly to throw up the unexpected. That is not to say, however, that the replies to the

questions already in the mind of the investigator before the interview begins might not also be surprising and suggesting some adjustment of the investigator’s understanding.

How valid the knowledge is in intensive methods depends on obtaining corroboration of the answers provided by any one respondent. Other respondents need to be questioned for alternative understandings that might shed doubt on the statements of others. These might, at the same time, however, shed light on the fact that understandings are contested and that this contestation is around the conditions empowering or limiting people in what they do. Workers, for example, are likely to come up with different explanations for a firm’s actions and strategies than representatives of the firm itself.

The two types of method, intensive and extensive, however, need to be seen as complementary rather than mutually exclusive. Pattern research of the sort that extensive methods are used for, tells us what we need to explain. It also suggests some elements of the causal explanation we are looking for. It is unlikely it will shed light on causal mechanisms; this is much more likely to come from social theory. But the role of contingent conditions – like assisted area status – can be illuminated and set up questions for the intensive stage of the research.

Intensive and Extensive Methods: A Summary

| | INTENSIVE METHODS | EXTENSIVE METHODS |
|-------------------|--|--|
| Research Question | How does a process work in a particular case or number of cases? What produces a certain change? What did the agents actually do? | What are the regularities, distinguishing features of a population? |
| Type of Account | Causal explanation of the production of certain objects or events, though not | Descriptive ‘representative’ generalizations, lacking in explanatory |

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|-------------------|---|--|
| Produced | necessarily representative ones. | penetration. |
| Typical Methods | Study of individual agents in their causal contexts, interactive interviews, ethnography. | Statistical analysis. Large-scale survey of population or representative sample, formal questionnaires, standardized interviews. |
| Appropriate Tests | Corroboration. | Replication. |

Based on Figure 13 (p.243) in A Sayer (1984) *Method in Social Science*.

2. Discourse Analysis

One of the developments in human geography that cut short the life of CR and its impact on the field was the emergence of the various ‘posts’; first post-modernism, and then post-structuralism and post-colonialism. Central to these approaches has been the analysis of discourse, including the discourses represented by theories, and how they affect human action and geographic relationships.

Theories, and discourses more generally, are now the object of study. They are analyzed in terms of their unvoiced assumptions, what they highlight and what they are silent on. Every social theory is seen as partial, as situated in particular geohistorical circumstances, and as reflecting power relations. They are interpreted as representations of partial truths that are gendered, raced, classed, defining a Western viewpoint. Harvey’s critique of the SQR as ‘status quo theory’ was very much along these lines, but now the critique is turned against historical materialism as itself representing a power position; as a masculine viewpoint as well as a Western one. Marx emphasized production or what would have been then the masculine sphere as opposed to the more feminine sphere of the reproduction of labor power in the house. He also rubbished the

non-Western societies of the East seeing them as stagnant and impossible of development until the arrival of capitalist relations of production brought by the Western colonizers.

Ideas of universal truth are now suspect. Their claims to universality, whether those of neo-classical economics, patriarchal social science, Marxism or the SQR, are now seen as at best, mistaken, and often ploys, strategies to subordinate people, to persuade them that the way they interpret the world is how it has to be, how it is naturally so, and therefore, that resistance is futile. According to this view, knowledge is constructed, intentionally or not, so that it reproduces identities – as male and female, black and white, for example – and therefore a particular set of social relations of inequality. Marginalization is often thoroughly intended. The discourse of so-called Orientalism is especially pertinent in this regard. This was a set of ideas formulated in the nineteenth century in order to make sense of Oriental societies. A dominant motif in this literature was the counterposing of a Europe which was rational, mature and normal with an irrational, backward and depraved Orient. Such a discourse clearly flattered Europeans and reminds us that we define ourselves through our representations of others. Furthermore, and accordingly, the new approaches emphasizing discourse, were born of struggles against hegemonic knowledges; the feminist struggle, the struggles for racial equality and for the overthrow of colonial and neo-colonial relations.¹⁰

But not only are theories with universalistic claims – so called metanarratives – the source of oppression; they are also seen as impossible, as having ambitions -- to transcend the here and now, the transient by means of a more universalistic representation of the social world -- that can't possibly be realized. Rather, all concepts, explanations, standards of truth are impregnated, intentionally or not, with some socio-historic bias. Social scientists that believe otherwise should confront the paradoxical nature of their practice. For on the one hand they assert that humans are constituted by their particular socio-historic circumstances. And on the other that they -- the

¹⁰ On post-colonialism see: <http://www.sou.edu/English/IDTC/Issues/postcol/postdef.htm>; and <http://orion.it.luc.edu/~mparks1/Postcolonial/Bibliography/bib.html>.

social scientists -- are not like other men since they can escape their embeddedness by creating non-local, non-contextually valid concepts and standards.

A particular aspect of this approach that we need to be alert to is its non-foundationalism. The claim is that there are no assumptions about the world that we can call on to give our knowledge of it a firm foundation. Human nature, for example, with all the powers and other causal properties attributed to it by CR and historical materialism both, is discursively constructed. There is, therefore, no universal truth which can be used to arbitrate between one theory and another. All theories, in this view, are power plays and all that we can do with them is interpret them in terms of broader discursive formations; formations that entrench existing patterns of inequality or which subordinate formations that challenge those patterns.¹¹

What, therefore, might we make of these sorts of argument? We don't need to embrace them in their entirety in order to see that they have some point and can exercise a useful sensitizing role. We need to be more aware, for example, of how our theories *are* ethnocentric and how little we know of how they might -- or might not -- apply to the concrete circumstances of the Third World. There is also something to be said for a search not so much for order in the way we have been encouraged but for disorder. Geography focuses on spatial juxtapositions but there are lots of juxtapositions which we pass over because they seem not to fall into any sort of pattern and hence are identified as causally uninteresting. On the other hand it is precisely these odd juxtapositions which may make a difference in what happens and hence in our understanding of change by (e.g.) creating the possibilities for technological or social novelty.

3. Dualisms

Dualisms or binaries are a very common way of thinking in the social sciences, including human geography. One thinks, for example, of such cases as individual and society, culture and

¹¹ An excellent paper that examines non-foundationalism in the context of a debate between Chomsky and Foucault can be found at: <http://www.csudh.edu/dearhabermas/chomfouc01.htm>

economy, state and citizen, and also some that are more specific to human geography: urban vs. rural, global vs. local, time vs. space, center vs. periphery, and space vs. place. The idea is to capture the meaning of something in terms of its opposite: what it excludes.

Note, though, that this is just one expression of those neat divisions of the world with which we are all familiar. We can certainly view the culture/economy distinction with some doubt: after all, isn't the economic to do with the cultural? How can we understand the demand for different goods and services for example, without taking into account norms and values? But why shouldn't we consider the culture/economy/polity distinction in the same way? To refer back to a discussion in Module 2.1.1 the social process has a number of distinct aspects: the discursive, the imaginary, the institutional, etc. We can treat these as separate just as we do the two terms making up a dualism, but similar doubts will – or should – surface.

3.2 So exactly when and what were those doubts in human geography? It is clearly a matter of human geography beyond the SQR and the sharp interrogation of some of its underlying assumptions. More specifically it is a question of the SQR's adherence to positivism. In particular we should note the assumptions that what we observe speaks for itself without any interpretive framework that we might bring to bear on it. There is also the idea that facts are separate from values. Critiquing this is more than the claim that facts imply values because we wouldn't attend to something unless it was important to us. Facts are meanings and meanings secrete values as in the fact that such-and-such is 'a third world country'; not just poor, therefore, but third-rate.

One way of approaching the problem of dualisms is to recognize that facts are socially constructed. We differentiate the world in certain ways, and those ways change over time. Prior to the nineteenth century to have talked about 'unemployed' in reference to people would have been meaningless. So at the very least certain conditions have to be in place – in that instance, wage workers who can't find employment – for that difference to be drawn: unemployed vs. employed. The process of constructing difference in the world is also very often a question of

positionality. This was clear in our earlier discussion of Orientalism and the difference drawn between Europe on the one hand and non-Europe on the other. It is a distinction made by Europeans and one which they can use to justify their continued dominance of less developed countries: Europeans have a know-how and probity which the non-European, technically inept and corrupt, can't possibly have.

These examples also suggest something else about this process of differentiation; in its pursuit of mutually exclusive properties (to be unemployed, is to be not employed; European/non-European) we miss the way in which the different conditions making up the social world are related to one another. . In the case of Orientalism this is clear. Europeans couldn't imagine themselves in the way they do without some contact and relationship with and to non-Europeans. The employment case deserves more attention. To be unemployed makes no sense except in a world where it is possible to be employed. Furthermore, the fact that some are employed may depend on others being unemployed. This is because businesses will only employ workers if wages are low enough for them to make a profit. And the wage level depends on the presence of unemployed people to curb the wage demands of others.

Some of the dualisms common in geography are easy to deal with in this way. Considering the urban and the rural, for example, they are at the very least related since they can be understood as categories in the geographic division of labor. One can also look at them in terms of their construction. Why might people have wanted to make that distinction? Does it have to do with that decay of the traditional community in the face of urbanization that social observers worried about so much in the nineteenth century? (Answer: Yes). And for whom would it have been a worry? Who was affected by the breakdown of those traditional ties, identified with the countryside? Employers, certainly, would have been concerned since the old paternalisms of what Friedrich Toennies called *gemeinschaft* were breaking down and they were being confronted by an increasingly militant labor movement.

Some Recurring Themes

There are some recurring themes in this brief history of method, in the broad sense of the term, in geography. Some of these can be discussed in terms of oppositions. The two I want to briefly focus on here are pattern- vs. process-based approaches; and generalizing vs. contextualizing approaches. There is also, however, the question of critiquing dualisms or so-called binaries of this nature and that will also be taken up.

1. Pattern vs. Process Approaches to Understanding

One of the great accomplishments of the SQR was its focus on identifying spatial order or pattern in the world and developing methods for that purpose. For sure it marginalized *disorder* of the sort whose importance Massey has recently demonstrated. It did, however, demonstrate something important about the world; that there *are* tendencies to spatial ordering, just as there might also be tendencies to spatial *disordering*. The geographic ordering of cities of different sizes which central place theory seeks to explain is undeniable; likewise the tendencies to order in the structure of the capitalist city – the decrease in land values with distance from the CBD, the tendencies to residential segregation, and so on.

To some degree, patterns of this nature provided the basis for inferring process. The strong tendencies for short distance as opposed to long distance migration were inferred to be the result of distance-minimizing behavior. This might seem tautological – explaining distance minimization in terms of distance minimization – but a further step was taken by relating that behavior to what was seen as some essential human tendency: that of putting forth the least effort necessary. An assumption of central place theory is that people patronize the nearest center offering a particular retail good or service, and this would certainly seem to be consistent with the pattern it was supposed to help explain.

In addition, however, in order to understand these patterns, human geography at least, turned to other social sciences for inspiration, and in particular, economics. Yet in many respects mainstream economic theory too depended for its understanding of process on inferences from pattern: increasing demand was followed by a rise in price; price rises in turn were followed by increases in supply; as the market expanded, specialization increased; minimizing transportation costs facilitated profitability and so on. So if one started not with geographic pattern but with ideas about economic theory, then regular patterns, order would be the result; which was exactly what happened in the case of the location theories of Von Thünen, Alonso and Lösch. Processes based on concepts of empirical order generated more empirical order.

The break from this circular reasoning came with Harvey's discussion of 'status quo' theory, something that we briefly discussed earlier in the module. The circularity that had been set up between pattern-based and process-based approaches to understanding was then revealed. Only by severing the link between process-based approaches and empirical order or patterning in the affairs of society, could that circularity in the argument be broken. What Harvey did was to show that mainstream views of process, derived from economics and ultimately from an observation of order in economic life, had themselves to be explained in terms of particular, historically specific, forms of social organization that were, in turn, underpinned by power asymmetries; in his case, the power asymmetry between capital and the working class. This was the condition for economic theory and the orderings on which it was based, being 'true.' This is strikingly demonstrated in his discussion of urban housing and what happens to its distribution when private property in housing and land is abolished. In this way Harvey showed that evaluating the relative strengths and weaknesses of pattern- and process-based approaches to explanation depends on one's understanding of process; in particular whether or not it is a concept that draws on empirical regularities.

Dobson's article on arguments about continental drift is interesting in this regard, even though they are drawn from the very different world of physical geographers. Dobson, recall, starts out by distinguishing between what he calls spatial and process logic respectively. Spatial logic is a form of reasoning in which morphology, spatial distribution and regularity, along with temporal association, form the primary evidence of 'collective earth processes' that must then be tested through process-oriented research. Process logic, on the other hand, is reasoning in which each worker / discipline studies a selective set of processes, synthesizes out of them some general theory and then tests for spatial and temporal consistency.

The example he uses to illustrate his argument is the history of the idea of continental drift. The idea was originally suggested by the German geologist Alfred Wegener. He did so on the basis of pattern or spatial logic: coastlines, geologies, palaeoclimates, ancient plant and animal species in the form of fossil remains, and gravitational anomalies, all seemed to suggest that at one time the continents of the world had been part of just one super-continent, and had only subsequently moved to their current positions. This was rejected by most earth scientists on the grounds of the lack of evidence for a causal mechanism capable of moving the continents in this way: form or pattern did not necessarily reveal process, in other words. Only subsequently in the late to mid-'sixties was the argument of continental drift accepted. This occurred with the discovery of sea-floor spreading and the advancing of the theory of tectonic plates.

The lesson that Dobson tries to draw from this is that spatial patterns are difficult to interpret not because they fail to represent process but because they represent all processes *collectively and indistinguishably*. Wegener was 'able to discern an integrative process (continental drift) through spatial patterns and associations' but it was unconvincing because the various conditions and interactions that would have made the mechanism plausible were either unknown or poorly understood.

Much seems to depend in Dobson's argument on what he means by 'an integrative process.' Perhaps the analogy of the internal combustion engine might help. It is certainly 'a mechanism'; it makes things happen by creating a source of power that can be harnessed for turning wheels, rods and the like. But it depends on bringing together various processes that can be conceived independently of one another. One is the way the igniting of a gas creates pressure (on the pistons); another is the mechanism used to ignite the gas – the ignition, in other words; another is the process through which a fluid, gasoline, is converted into a gaseous form in the carburettor. All these sub-mechanisms have to be brought together to make the internal combustion engine work. So if at some future time, after immense global convulsions, the wiping out of existing civilizations and virtually all trace of them, and the slow emergence of new ones, old films were discovered of cars moving around, what might the scientists of the day make of them? They might engage in pattern logic and infer from the wheels that there was an engine that made them go round. But so long as the details about the engine, what made the engine work (cf. what made continental drift work) there would be skepticism.

Pattern or spatial logic, therefore, has its limits. It can indeed suggest processes but cannot be conclusive. We also saw from the discussion of CR and the case of assisted areas, how it might also suggest particular conditions important to the emergence of a particular geography; in that case, one of new business investment. Likewise, the bidding up of home values in 'more desirable' school districts (a pattern) suggests a process: that people want a better education for their children. But note how much it leaves out; the meaning parents impute to children and why they impute that meaning; the transformation of the economy, which has made the acquisition of formal educational qualifications important, among other things.

What, however, of process logic? If we can't infer process from spatial pattern, can we infer spatial pattern from process? Does our knowledge of processes actually translate into an

understanding of concrete patterns? Actually not, because actual spatial arrangements make a difference. This is something that Sayer observed in his discussion of the difference that space makes. It also brings us to a consideration of the importance of context in attempting to explain geographic pattern.

2. Generalization vs. Contextualization

One feature of the history of method in geography since the SQR has been an increased recognition of the distinction between form and process; between what creates a form or pattern and the form or pattern itself. As I suggested above, during the SQR this distinction was not strongly developed. Ideas about process tended to be based on evidence from patterns producing what Sayer called, 'theory as ordering framework.' Subsequently, however, and with the move to post-positivist methods, skepticism towards the privileging of observation and the fact / value distinction, this changed.

At the same time as this change was occurring another was underway. This was the increased recognition of the importance of context, spatial or spatio-temporal (as in Massey's space-time juxtapositions), in understanding, and the limits of ideas about general process. One of the first people to notice the problem of generalizing approaches, whether rooted in empirical regularities or in more general notions of process such as those of historical materialism or even CR, was Hägerstrand. In talking about this issue I want to draw on a paper of his published in *Regional Studies* in 1984, though his concerns dated back to 1970.¹²

In a paper with the enigmatic title "Presence and Absence; A Look at Conceptual Choices and Bodily Necessities" he starts out by suggesting that science is much better at decomposing than it is at putting together and placing its constructs back into reality. He tries to clarify this by

¹² "What About People in Regional Science?" *Papers and Proceedings of the Regional Science Association* 24, 7-21.

reference to what he says are two approaches to conceptualization. In one of these we classify by removing objects from their surroundings or, if they are organisms, their habitats, and from what they are an intrinsic part of. This includes breaking individuals into their different aspects like gender, age, class, education and so forth, as is the practice of many sociologists (see their cross-tabulations for evidence of it). In his earlier 1970 paper he complained of how social science, therefore, tended to study 'dividuals rather than *individuals* (indivisible, in other words). He claims that this decompositional approach has been the exclusive one of empirical science. We can certainly see how this jibes with an interest, among other things, in empirical regularities, like those that the sociologists discover through their cross-tabulations. One consequence of the dominance of this approach has been a division of academic labor that ties disciplines to their own classes of phenomena; economics to the economic, political science to the political, entomologists to insects, zoologists to animals (the same animals that are often the habitat for insects) and so on.

The second approach to conceptualization, he continues, and clearly the one he wants to advocate, is to enclose a part of the world as it is found with its mixed assortment of beings – to put things in context, in other words. For it is only by putting objects and laws in particular contexts that we can see how they work out in terms of empirical effects:

“With his law of gravitation Newton could predict how an apple accelerates when it falls to the ground from its branch. Perhaps somebody has calculated the strength of apples seen as material. But none of these general pieces of knowledge are sufficient to tell if Newton's apple would get crushed or not after reaching the ground. In order to judge that part of the event, one needs to know if the ground is made up of, for example, grass or hard pavement. One must, in other words, look into the diorama which shows in what ways things are present with respect to each other just where events happen.” (pp. 3-4).

This will recall some of the arguments that the critical realist Sayer made about the importance of spatial arrangement; the effect of dropping an atom bomb depends on spatial arrangement, whether it is dropped on a city or in the desert, for example. The point that Hagerstrand is trying to make, therefore, is that context (cf. Sayer's spatial arrangement) is essential to understanding

empirical outcomes. He argues further that contextualizing processes, evidence of all sorts, requires skills of an interpretive sort. He refers to this as a matter of developing a sense of context. In referring to the work of archeologists trying to understand the significance of what they have found, he suggests that: “The remnants themselves and their precise locations are fragments of a text which the researchers must try to fill out to a complete story.” This is certainly consistent with certain practices not just in human but also in physical geography¹³ and, of course, with Massey’s concern for space-time juxtapositions and geography as a ‘complex and historical discipline’ – presumably like archaeology, as well as geology, epidemiology and all the other spatial sciences.

There are some difficulties with Hägerstrand’s formulation. It might seem from the Newton example above that he is almost exclusively concerned with context as context for the working out of processes that are already given. Yet in trying to accentuate the distinction in approaches to conceptualization he tells a story about a teacher who asked a colleague’s child to divide three objects – a bear, a mouse, and a tree – into two groups. The answer the teacher is looking for is to put the bear and the mouse in one group and the tree in the other: conceptualization by classifying according to shared characteristics, even though the bear and the mouse are very different in many other ways; not least, of course, is the fact that bears use trees as their habitat – a *contextual* approach to grouping objects, in other words. From one standpoint, however, the bear-in-tree example is misleading. This is because it suggests that the focus is on context as defining a structure of relations – contexts as structured/selected in, in order to provide the necessary preconditions for some object – bears moving into forests since they are necessary to their survival. On the other hand, the reference to interpretation and 'putting in context' as a means of interpretation, suggests a move in the direction of necessary relations between objects

¹³ See, for example, David Sugden (1996) "The East Antarctic Ice Sheet; Unstable Ice or Unstable Ideas?" *Transactions of the Institute of British Geographers* 21:3, 443-454. This interpretive element was also an important aspect of the older, pre-1950s geomorphology. It always had a strong regional character, looking at particular ensembles of landforms and trying to understand their history. For some examples of interpretive work on river diversion, see George Dury *The Face of the Earth* (Penguin 1959), pp.167-172 and Chapter 17.

and practices – context as defining necessary preconditions for objects, as in trees providing a necessary condition for bears.

The latter would lead in the direction of Massey’s space-time juxtapositions and the way in which they can be the condition for new structures of social relations: firms operating in roughly the same sector of the economy might well find themselves, quite by accident, in close proximity one to another. This could result in relations between them, increased specialization with each firm becoming a customer of another’s products or its supplier. Other types of economies of agglomeration might also occur. The end result would be relations between the firms of a necessary character: they are dependent on one another for their own profitability. The local *context* has become crucial to them just as the tree is crucial to the bear. Massey’s work on space-time juxtapositions, therefore, represents a move in a contextualizing direction.

From another angle, however, the contextualizing / generalizing dualism is a false one. Unless one believes in the universality of at least *some* generalizations, then all statements of regularity are context specific: to modernity, the advanced capitalist societies, the Western city, the Newly Industrializing Countries of the Far East, or whatever. This suggests, rightly, that *all* theory is context-specific. Theories develop in particular spatio-temporal contexts in order to understand them, overthrow them, etc. As Gregory remarks in the entry ‘contextual approach’ in the *Dictionary of Human Geography*:

“... a sensitivity to context means that all theories are limited and partial – they are all marked by the contexts from which they emerged and the circumstances to which they are made to respond – so that it is now widely accepted that the particularities of any situation cannot be read off from the formulations of any grand theory.” (p.111)

And geographic thought is no exception to these strictures, as we will see in the third and final section of the course.

Finally, we should note the universality of these arguments, certainly within human geography and perhaps to physical geography as well. Quantitative geography is increasingly sensitive to

issues of context. There is increasing recognition that universal spatial laws are an impossible aspiration. Rather gravity coefficients, correlation and regression coefficients will vary over space and time, and that is something that should be taken advantage of. Measures for describing that variation should be developed and the variation subsequently studied and understood.

3. Dualistic Thinking:

Appendix A: Empirical Regularities: Their Use and Limitations

A. GRAVITY MODELS

1. A common approach to characterizing migration data is in terms of a gravity model. The volume of migration between pairs of points is regressed on intervening distance and various other independent variables designed to measure the attractiveness or otherwise of destinations, like their population size, or the rate of growth of their economies. Attention then focuses on the regression coefficient for intervening distance. This will be negative and the more negative it is, the steeper the slope. The steeper the slope, the greater the rapidity with which movement attenuates with increasing distance; the more people are 'sensitive' to distance, therefore. The less negative the slope, then the more indifferent they are. But one thing to be aware of is that the slope will indeed vary from one study to another.

2. This relation is commonly interpreted in terms of the increasing difficulty of obtaining information about jobs and housing at more distant locations; the expense of moving over longer distances; the inertial factors of family and friends which keep people within easy accessibility of them when considering a move somewhere else. But this is all quite conjectural.

3. So let us assume that we talk to people who have moved over varying distances in order to try to understand how intervening distance does indeed affect migration. One of the things we would

discover would be the huge variety of circumstances which led to their current locations, circumstances that are hard to reduce to differences in intervening distance.

For example in talking to people who moved, say, 600 miles to get to their current location, this is what we might find out:

- For some it represents a move *back* closer to where they were born. So in other words, there was an earlier migration which took them much further away from family and friends. In other words, migration distances can be misleading when abstracted from all the previous migrations undertaken by a person.
- Some will find themselves moving because of marriage. This would have been common in the US during the period of the military draft. So people are drafted, located at a long distance, meet somebody, are introduced to a local employer, and so on.
- Something similar can happen through university education. Students who go out of state are more likely to end up there ‘permanently’ than those who go in-state. Again, marriage factors in; also whether or not they get assimilated into the local job market through interning while an undergrad, attending local job fairs. Whether one does undergrad work in- or out-of-state is partly affected by income, of course.
- Friends and relatives elsewhere mediate long distance movement, as in chain migration.
- The structure of job markets: People relate to the distance at which job opportunities exist differently. One of the reasons for this is the way in which job markets differ in their geographic structure. For most people, job markets are very local and accessing information about jobs in (e.g.) other metro job markets, or minimizing the risk of a move, isn’t easy. Compare with professionals who find out about jobs through national trade journals, get flown out for an interview, help with moving expenses, introduced to realtors, etc.
- Migration isn’t simply a move; it is a change of employment, unless one is moving within the same firm. But older people find it harder to get hired by another employer. This may be because they are seen as less trainable or because they increase health care premiums for the employer.

Some of these considerations could be inserted into a gravity model, assuming, that is, that we have data on migration streams classified by occupation. Indeed, all other things being equal, we would find that unskilled, semi-skilled and some skilled people would be less likely to migrate over longer distances. But it wouldn't tell us *why*. In order to find out we would have to look, among other things, at the geographic structure of labor markets.

B. 'ASSISTED AREA STATUS'

Recall Sayer's example of the relation between 'assisted area status' and the growth of employment; places in 'assisted areas' tended to have increased employment growth during the 1960s than places that weren't. So what sort of causal sense can we make of it? The obvious conclusion is that assisted area status was a necessary, but not sufficient, condition for employment growth. I would suggest that for some firms it wasn't even necessary. But, again, and as Sayer urges, you would have to go and examine particular cases as well as the 'case' represented by the particular geohistorical context referred to.

1. Some firms would have expanded in the assisted areas regardless. Some would have already been there and would therefore not be eligible for assistance. Others would have moved in regardless of the availability of assistance. Their locational advantage would not have been 'assisted area status' therefore, but something else: perhaps the particular sector of the economy they were in, the attractions of a pool of unemployed, or both. In some instances, employment growth would have resulted from shifts in capacity from one branch to another. The 1960s in Britain were characterized by labor shortages over much of the country, so the labor reserves of the 'assisted areas' would have been very attractive.

2. Much depends on the geohistorical conditions. As I said, the 1960s were a boom period in Britain. Not only that. In the 1960s the coal mines in the 'assisted areas' were still open and providing large amounts of employment. But the mid-'80s they had closed. Employment growth went negative regardless of assisted area status.

The geographic circumstances were also different. There were no cheap labor reserves in Eastern Europe that could be accessed in order to solve labor shortage problems. But by the 1990s, even with 'assisted area status' British localities were struggling to match the attractions, particularly low labor costs, of localities in Poland, Hungary, Slovakia and so forth.

So in trying to identify the crucial causal conditions, one has to go to the individual case, whether that of the individual firm making decisions over employment increases and where to expand employment and why, as well as to the case represented by 1960s Britain.

Appendix B: Decontextualization

Sayer complains in his paper on ‘Realism and Geography’ about how empirical regularities take individual observations out of their causal contexts so that the understandings we arrive at are very, very limited: confined, in fact, to the contingent conditions represented by the variables (like assisted area status) incorporated into the correlational or regression analysis, or indeed, into any other method, like cross-tabulations, designed to identify empirical regularities. In his article in *Regional Studies* on presences and absences, Hagerstrand makes a similar point. He contrasts approaches to understanding which abstract particular attributes of people out of their wider settings, and those which put people in the context of those conditions important to how and why they act, and what happens when they do act. So imagine: Every point on a scatter diagram, where observations are individual people, represents a story. For sure it also represents a point in the space identified by the independent and dependent variables. But in order to understand its ‘score’ on the dependent variable, its score on the independent variable is only the tiniest of beginnings.

Consider as an example, a cross-tabulation linking migration movements to the level of unemployment in destination areas. Let us assume something like the following:

| | | | |
|-------------------------|------|--------|-----|
| PERCENT UNEMPLOYED | HIGH | MEDIUM | LOW |
| PERCENT OF ALL MIGRANTS | 20% | 30% | 50% |

Migrant destinations are clearly associated with levels of unemployment: not many move towards areas of high unemployment; half go to areas of low unemployment. This seems reasonable enough and certainly squares with our intuitive expectations. Notice several things, however:

- i. The analysis does not directly address the mechanisms through which people move to destinations of variable unemployment. Certainly implicit in the relationship is what one might expect in a simple labor market model: people go where the jobs are and avoid

those where they aren't. One might even incorporate into the explanation the Marxist assumption that this is because people, separated from the means of production, *have* to go where the jobs are. But when we examine the individuals making up this sample we find that while they might, when pressed, agree that they are compelled to move to where the jobs are because they need a job, the more concrete mechanisms are quite variable. Many of the less skilled might move through some sort of chain migration mechanism. In order for such a mechanism to induce migration there must be jobs to go to. More technical and professional elements of the labor force might go through the labor allocation policies of their employers, shifting them around from one branch to another, for example.

- ii. There are also those who move contrary to the dominant direction of the relationship. How are we to explain the 20% who actually move *to* areas of high unemployment? Well, for a start the growth of state employment is likely to be less variable from one area to another than that of private employment. So one might reasonably expect teachers, civil servants, military personnel, to be less affected in their migratory moves by regional unemployment levels than, say, those working in less skilled occupations. Not only that. Even in an area of heavy unemployment there are likely to be *growth* sectors or ones spurned by the locals, that migrants can move into, as many Hispanics in the US or East Europeans in Britain will readily affirm.
- iii. Other contingent conditions might induce people to move to areas of relatively high unemployment. They might be people moving back for family reasons: to be near the spouses's parents, perhaps. There might well be some who are moving back to retire there, and for whom unemployment level is quite irrelevant.
- iv. By the same token, those moving to areas of low unemployment might be moving there for reasons in addition to the fact that there are jobs there. Some are moving because a spouse got a job there. Others find themselves stationed there doing military service, meet a local woman, get married, find a job and 'settle down.' For sure they would have been less likely to 'settle down' there if the area had been one of high unemployment, but other contingent conditions are also in play.

Granting that an empirical regularity will shed little or no light on mechanisms, and that its major utility will be identifying contingent conditions, could we not say that a multiple regression approach is designed to incorporate as many of the relevant contingent conditions as possible? This would certainly be a desirable goal. But the contexts within which people make migration decisions are extraordinarily diverse: far more diverse than the examples given above. Likewise the possibility that they have been identified by existing theory is unlikely. The world constantly changes. New contingent conditions emerge as important and some become less important. Military service in a particular location is far less important than it would have been when it was mandatory, for example. So people have to be interviewed in a relatively unstructured way in order to find out not just what the mechanism was in their case but also the particular context of contingent conditions which bore upon their move.

Appendix C: Facts and Values

A common belief, not confined to positivism, is that science can only determine the truth or otherwise of claims of a factual nature; it cannot adjudicate on claims regarding values, what is good or bad. So, for example, we can determine facts about migration: its geography, who participates, how much return migration there is. But as scientists we cannot determine whether it is a good or a bad thing, though interestingly our treatment of it often secretes values, as in 'brain drains.' The same goes for central place theory. We can establish that distributions of towns of different size are in accord with it, but not whether it is a good or a bad thing; though again, the view that this is an efficient outcome suggests again that values are hard to keep out of the analysis.

The desirability of the separation of facts from values is a very common view with a long history. It partly reflects the attempts of nineteenth century science to liberate itself from the intrusion of religion into arbitrating knowledge claims. Limiting science to the observable was an attempt to avoid appeals to causes of a supernatural nature. In the same way, separating facts from values was inspired in part by a desire to define separate spheres for science and religion; one would deal with questions of fact and the other with questions of value. This attempt to

separate, however, has not been easy. Understanding *why* it has not been easy, why the attempt to separate facts from values is bound to fail, is equally difficult. What makes it particularly difficult is that academic research rarely signals the values informing it; rather, the statements and claims that are made only become meaningful in wider, hidden contexts of beliefs and values, so the value content of claims and statements does not have to be stated to be communicated. However, these remain crucial issues for us and they do yield to sustained reflection.

1. Consider first the set of contrasts to which the fact / value distinction belongs:

fact / value
is/ ought
positive / normative
science / ideology
description / prescription
explanation / evaluation
objective / subjective

These are additional dualisms which we need to critique, therefore, as in earlier Modules. Consider, for a start, the following counter-claims:

- Explanations aren't separate from evaluations. Rather explanations can be evaluated; we do it all the time. How 'good' is such-and-such an explanation as compared with another? The same goes for facts; we have to *evaluate* their truth or otherwise.
- How 'good' a prescription it is, depends on how 'good' the description of the underlying illness or disease has been, as any doctor or pharmacist will affirm. Neo-classical economists will come up with descriptions of what causes unemployment that are very different from those of Marxists, and their prescriptions are accordingly different.
- We impute more value to some facts than others. We are indifferent to many things in the world about which we claim to have factual knowledge, like the geomorphological

effects of the last glaciation. However, we are not indifferent to others, like global warming, hurricanes, unemployment or air pollution..

- Values themselves can be subject to investigation of a factual sort. People think that living in the inner city is a bad thing and this can be investigated in terms of the balance of advantages and disadvantages. Of course, claiming that something is an ‘advantage’ (access to downtown employment?) or a ‘disadvantage’ (high crime rates?) can be defined as value judgments, but again they too can be investigated rationally in terms of the demands of a particular material and social context; how minimizing the journey to work or exposure to crime can be defined as rational given our particular social arrangements of wage labor or material concerns for a bodies.

In short, values are unavoidable and need to be rooted in particular material and social contexts.

2. Consider how discourses, as in research papers or monographs, inevitably entail values – senses of what is good or bad, important or unimportant:

2.1 This works in the most obvious sense through the rhetorical character of language. Language often has a persuasive character which appeals to certain taken-for-granted values. Note especially how many of the terms that we use have both a descriptive and an evaluative component: depressed area / desertification / global warming / efficiency / accuracy / spatial mismatch / garden suburb, exclusionary zoning / enterprise zone / slum / science / sustainability / pollution. Some of these are more obvious than others as in terrorist, freedom fighter, or First vs. Third World.

2.2 It can also work in part through the structure of a narrative, and how it can pull the reader along in a certain, value loaded, direction. There was a social science literature in the late ’fifties, in both the US and in Britain, focusing on the disintegration of close, face-to-face, typically working class, urban neighborhoods. This built on certain more widely held views of the displacement of close, kinship-mediated, relations in neighborhoods ‘with character’ by ‘faceless suburbs.’ These studies would typically trace out a narrative of decline, a sort of ‘world we have

lost' view. Starting with a description of how it used to be, and how it is now, backed up with extracts from interviews with the displaced or those still living there, it would then move on to examine people who had relocated to the suburbs and the way this had disrupted old kinship relations that had been mediated by neighborhood. The implicit, and sometimes not-so-implicit, message was that close, highly affective, relations with others are things that are worth defending; though *why* they were worth defending, why they corresponded to certain ahistoric social needs, rather than say the needs for mutual aid in a pre-welfare state society that no longer existed, why some were happy to put them behind them, received less attention.

2.3 Most importantly discourses entail values through the structure of theories. They *secrete* certain values through their emphases and exclusions, selectively valorizing and devalorizing:

- Mainstream economics emphasizes efficiency and growth rather than equality, for example. Markets produce certain allocative effects automatically. When states intervene, what we risk is a 'misallocation' of resources. The term 'misallocation' is interesting, of course, as are the associated 'shortages' and 'surpluses that go to waste', suggesting making a mess of things, where one should rely on the market instead. The notion that competitive markets prevent the exploitation of one exchanger by another is an additional (implicit) recommendation for them. After all, exploitation is something that is generally regarded as undesirable.
- South African studies during apartheid: Under apartheid, state legislation privileged whites in South Africa relative to Africans quite hugely. Legislation of a racially discriminatory sort was elaborated and applied on a scale hitherto unknown, except perhaps in Nazi Germany. As a result academics tended to see South Africa as 'abnormal' and the state as an important 'independent' variable in explaining that 'abnormality.' The South African state was believed to play a crucial role in the prevalence of migrant labor, in the redistribution of industry towards areas of dominantly African residence (to keep them out of the cities), and in the fact that the franchise was of such a limited nature (whites only). But in retrospect it is not clear that apartheid was that

crucial a condition. There were other things going on in South Africa that could provide a significant part of the explanation for these features of the country's geography and politics. Rather one could claim that the understandings of South Africa, and how it was described, expressed a commonly held value about government policy there, a value that became part of a global discourse: in short, that apartheid was a bad thing with all manner of undesirable consequences for, e.g., the geography of the country.

2.4 Note also how methods can underline the unity of facts and values. Under the SQR facts were equated to the measurable. In order to arrive at explanations generalization was necessary. Measurement and generalization were things that one *should* do. There was a preference for measurable statements about the world, indicating that methods too endorse particular values. These are claims that are challenged by those embracing post-positivist methods. But note how the different claims can be arbitrated rationally, as Sayer attempts to do in his discussion of extensive and intensive methods. As he suggests, in the pursuit of knowledge, different methods are good for different purposes. Contrary to the attempts of the original propagandists for the SQR there is no single, hegemonic view of science that lies beyond values. In fact, of course, the appropriation of 'science' by the SQR in order to describe what they were doing was in no way value-neutral but suggested their own values. In turn, and in part, these pointed towards their own interests in what Harvey describes as 'a shabby struggle for power.'

As a summary statement, what this suggests is that supposedly factual statements are always made within broader contexts of meaning which filter them in evaluative sorts of ways, which impart values to them. This is something of which the academic is usually aware; she knows that she is writing for a particular audience, attuned to certain ways of viewing the world, to certain ways of what passes as 'factual', though she would typically regard these views as self-evident truths and not as values.

3. Note finally three common ways of defending the fact / value distinction:

3.1 The means / ends approach: According to this view, science provides the (value free) means, identifying the various pros and cons of particular courses of action; particular societal values then come into play in the form of what particular means is chosen. But this is disingenuous since the means identified are unlikely to be value-free. Solutions to the presence of areas of heavy unemployment can include bringing employment to the workers through subsidizing the relocation of firms; or offering movement subsidies and labor market information to the unemployed. But it is very, very unlikely that the measures suggested would include forcible relocation. So values will inevitably be factored into the various ‘means’ suggested.

3.2 The ‘come clean’ approach: This is where the researcher is supposed to put her values upfront. This has become a recommended course of action for those influenced (positively) by various forms of post-modernism, post-colonialism, or anything where the author’s positionality weighs in. There are two problems with this, however: i) If the author’s values are so obvious that they can be separated from the facts of the case, then surely we don’t need this caveat. ii) If the values are inseparable from the facts, as, I have argued is inevitably the case, then we can’t ‘come clean’ anyway.

3.3 The ‘let a hundred flowers bloom’ approach: This is a recognition that values will inevitably be a part of our research, how we present it, and the methods we use, but ‘let me get on with my thing, and you get on with yours.’ This is actually what we have in considerable areas of human geography today. The underlying assumption seems to be that we should tolerate and not criticize each other. But is it the case that these matters can’t be debated? That perhaps there are areas of commonality, similar concepts that would allow adjudication of our differences and convergence on a common program of research?

