RULES AND IMPLEMENTS ; INVESTMENT IN FORMS*

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INTRODUCTION

A code is a tool well known to lawyers in the sense of a set of texts which have the force of law. But the term "code" is also used to refer to any collection of rules of principle in matters of morality or honour, and this shows that alongside the civil or criminal code, there exist codes which are less formally laid down, and sometimes not even written, whose effects are not as carefully controlled. Thus the term "code" is also applied to the set of conventions which govern "regulated" communications between people where the available equipment necessitates such a treatment of messages. Indeed, the spread of information technology has contributed to a huge increase in coding operations. By redefining the term, linguistic and semiological research has also greatly enlarged the range of fields in which codes may apply. However, there are such obvious differences between a code of trade, a code of honour, a telegraph code and a code of dress, that a simple demonstration that they all share a logical function does not amount to proof that they are the same.

Statistical coding operations lend themselves particularly well to the comparison and analysis of different code forms. Any scientific activity and, more generally, any attempts at rationalization depend on the process of formal categorization involved in such operations. But statistical coding also brings together the *legal* and *administrative* codes used in devising questionnaires, the *linguistic* codes which govern the statements of those who are interviewed, the *occupational* codes which provide recognized labels that can then be stated, the *cognitive* codes used by the coders who have to interpret the answers in order to place respondents under a heading in the nomenclature, and the *technical* codes needed so that the answers can be fed into computers. The first part of this essay, therefore, will review the findings of research on statistical coding, and especially on occupational status. This offers the greatest number of links with

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other code forms and is therefore a suitable object around which to attempt a consideration of the characteristics of the code form, as well as the kinds of équivalents it produces which make possible actual articulation with the different codes listed above.

Pourquoi pas "equivalence" ?

However, the research presented in this article is not concerned simply with the problems of statistical coding, and the discussion of them merely serves to introduce and illustrate a more general problematic to which the remainder of the text is devoted. In the second section Taylor's prescriptions are reconsidered and the code form is, as a result, compared with a whole series of instruments with which Taylor would wish to equip the scientific manager of labour– instruments which range from the tool itself, to the written instructions, the slide-rule and the "task" as he defines them. Sections three and four put forward a definition of *investment* which is able to cover this range of form-giving activities as well as the immobilization of capital usually meant by the expression, with a view to providing a better economic analysis of the respective use of capital and labour factors[1]. Section five suggests that the main practical application of this theoretical framework is in the investment in forms used to manage labour, and these are mostly readily observed, as is shown in section six when management methods change. Finally, section seven contains a discussion of some of the effects of the production of State forms with general validity.

Such a framework should allow economic analysis to take account of a set of established forms which are usually abandoned to other disciplines because they are thought of as "symbolic". However, grave inadequacies may result from the failure to integrate such forms into economic analysis as is the case with companies in which investment in forms is more decisive than investment in plant in determining performance.

Thus the final section provides a more general discussion of the effects of the investments which contribute to the establishment of equivalent forms. The fact that they are extremely costly is usually ignored in economic formalizations which, for the purposes of analysis, tend to assume that they have been established from the outset, rather like the currency. The article ends with a consideration of the effect of such investment in very general forms which constitute the State, on the power relations between agents who make use of more specific forms.

1. OCCUPATIONAL IDENTITY AS AN EXAMPLE OF THE CREATION OF CODE FORMS

All statistical production depends on coding, which is a primitive form of data processing since it implies that the information produced and analysed will be put into standard form. Statistical coding as a scientific activity is therefore regulated by logical principles which

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[1] This was the approach of a research project undertaken with Franc,ois Eymard-Duvernay. For the application of such an analysis to a specific company see
Section 6 and also Eymard-Duvernay and Thevenot (1982). Eymard-Duvernay and Thevenot (1983a) contains a re-examination, from a theoretical standpoint, of the concepts of "entry barrier" and "specific investment".

determine the *correct forms* of classification. But when a statistician is required to classify a post or status which has not already received technical, administrative or legal coding, these logical principles are flouted, and this is the case with young people whose family situations and occupational status are often ill-defined (Thevenot, 1979). Even when he falls back on made-to-measure logical categories such as age, the statistician cannot avoid using practical categories such as "young people" or "old people" and falling into the paradoxes they create. Such paradoxes have been likened to the "how many grains make a heap" model (Dummett, 1975; Weiss, 1976), and they can only be resolved by examining the degree of precision to be found in "contradictory" codings and seeing how these relate to the objectives of the social agents who make use of them. In this way the strategy of deliberate vagueness pursued by certain social groups can be analysed (Thevenot, 1979).

The "mental burden", as ergonomic specialists would describe it, of those employed in codification (Pinsky, 1980), which makes this phase the most costly in the process of statistical production, may be thought of as the cognitive burden of trying to adapt strictly logical relations (instructions for encoding) to the imprecise forms in which they appear. However, neither the research of cognitive psychology into such processes of adaptation (Pipino, Van Gigch and Tom, 1981), nor research into the typical, non criteria-based form of ordinary mental categories (Rosch, 1977), are able to give an adequate account of the heavy labour of adaptation, since they do not look at the relations between the form of *general categories* constituted for purposes of reckoning through legal procedures for example, and the *particular forms* used by individuals in their *interpretations*. The study of how social identities are recognized has clarified these relations (Boltanski and Thevenot, 1983).

On the other hand, a saving is achieved in statistical coding by having a link with other code forms. When occupations are divided into homogeneous and exclusive categories based on explicit criteria, according to the principles of the science of taxonomy, this must create a *de facto* link between such classifications and existing divisions—those which have already been established through standardization processes that have made such criteria seem permanent and useful and have turned them into a source that can be used in classification.

The research that has been most helpful in understanding this operation outside the particular logic of statistics is undoubtedly contained in sociological studies of the social uses of categorization (Boltanski, 1970; Bourdieu, Chamboredon and Passeron, 1973; Bourdieu and Boltanski, 1975). In addition, studies of the historical development of statistical nomenclatures have brought out the links between such classifications and other attempts at *creating code forms* which are controlled by corporate organizations or by the State. Thus the classification of economic activities in the 1861 nomenclature was based on a notion of product thanks to industrialists who banded together to protect themselves against free trade and thus gave weight to this criterion. Similarly, it would appear that the proposed 1942 nomenclature followed the lines of the Employers' Corporate Organization Committees (Comites d'organisation corporatifs du patronat) which were in fact set up as cartels (Guibert, Laganier and Volle, 1971; Volle, 1982). As far as the classification of occupational activities is concerned, it has been shown that the

statistical category of "cadres" (executives) and the criterion of "skill" which is used to separate workers into different categories were both linked to the legal constitution of these categories, and it was as a result of the collective agreements and labour regulations which began to come into force in the 1930s and which became generally applicable with the Decrets Parodi[2] in 1945 that their legal constitution took place (Desrosieres, 1977). Boltanki's analysis of the way "cadres" became a well-defined group has thrown light on the "social technologies" which enable the "collective persona" of social groups to be represented and, in consequence, identified (Boltanski, 1982). In addition, when the codification practices of the encoders employed by INSEE were closely examined, clear links were revealed between the statistical recording and the form in which the occupational identity of the employment notified by respondents had been established (Thevenot, 1983b).

Thus the terms "state", "commission", "office", "ministry" and "corps" all describe situations in which the post is most clearly defined and most strongly linked to the post-holder, with the link sometimes being confirmed by a legal act such as the purchase of a commission or the admission into a corps. Indeed, this link is so strong that the name of the individual who fulfils these functions is often preceded by the name of the function itself (as with Justice X, Lieutenant Y or Doctor Z). This then becomes a descriptive property which ensures that statistical coding is almost automatic even when it is done manually—i.e. without the encoders using automatic data-processing procedures. Like a computer *routine*, this link is the automatic result of the combination of code forms that have general validity. Moreover, this combination does not require any personal interpretation on the part of the code operatives, which may be expensive and is difficult for the producer to standardize. In this way, the criterion form which can be justified on logical principles also proves to be very economical because it makes possible articulations with other fixed forms and avoids the costs inherent in the personal interpretation of such articulations and in the collective negotiations which are needed to achieve uniformity among individual interpretations.

When the recent reform brought about changes in the occupational nomenclatures used for statistical purposes, this was an extremely opportune moment to examine the process of form-giving and how links are established with existing forms. It also provided a good opportunity to observe how the representatives delegated by occupational groups took steps to influence the statistical recording of their occupation in an attempt to achieve legal codification of a more advantageous kind (Desrosieres, Goy and Thevenot, 1983). The wording of a heading, the formulation of a definition, the disappearance of certain terms (such as "trade" or "hygiene") and the introduction of others (such as "information" or "health"), the standardization of a name and the promotion of a particular criterion for definition are all costly operations which are not exactly legal but which take place prior to such terms being enshrined in law. When an occupation is legally recognized it acquires a title, its prerogatives are laid down as are the way in which recruitment takes

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[2] A set of decrees issued by Minister of Labour Alexandre Parodi instituting scales of qualification-related wage rates.

place and the qualifications needed. In other words, competition is regulated in a field of occupations having to share a market.

What emerged was a continuum of more and less strongly constituted forms, ranging from the most consolidated occupational forms, anonymous titles with universal value because they had legal validity, to individual names which depended on the choice of the person notifying them. The less strongly constituted the form, the weaker its link with the statistical recording and the more costly it is to maintain. Thus a "craft" or "trade" may not be as tightly regulated as a commission or an office, but it at least ensures a permanent, quasi-universal guarantee of quality (almost an "appellation controlée"). By contrast such trade names have broken down in the processing industries, where job descriptions have ceased to have general validity, and are only specified at the more particular level of the company "*trademark*". The importance of such forms in company management has been brought out in the studies of the use of job classifications in individual companies (Thevenot, 1983b). For example, the opening of a plastics processing factory, designed for large-scale highly automated production, involved the taking of a number of strategic management decisions, one of which concerned job classification which is a classic tool of management. The firm had made heavy investments in injection presses and this had influenced its decision to set up in a rural area so as to keep down wage costs by employing labour with fewer educational or craft qualifications and less experience, which would have called for special remuneration. The manager of this factory had therefore followed up these investment options by a deliberate *phasing out* of the employment scales recognized by the national agreement which he considered outdated because they were based on craft definitions. At great cost, both in terms of design and because of the lengthy negotiations required with representatives of the employees, he drew up a new system of classifications in which craft names were replaced by references to an entirely artificial code system (OS lA; OS lB; etc.) and to the particular shop concerned (injection, extrusion, and so on). The phasing out and replacement of scales based on crafts, which are properties recognized beyond the particular company and which can be linked to qualifications controlled by the State, was in fact accompanied by much criticism of the claims of CAP[3] holders who consistently attempted to exploit their qualifications—in other words, to make a previous connexion work within this company.

Similarly, a study of the watch industry has thrown new light on the relation between job descriptions and the economic analysis of the companies which employ them (Eymard-Duvernay, 1981; Bony and Eymard-Duvernay, 1982). In this industry, job codification is less highly developed in companies in rural areas which are often small and not highly technical (since they tend to be concerned with assembling and marketing watches rather than the manufacture of components). The very personal relations between employers and workers are an extension of family and neighbourhood relations and are not mediated through outside institutions which might, for example, decide the criteria used to define jobs. Any classification valid beyond the individual company is therefore looked on by the employers as an attempt to brand

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[3] *Certificat d'aptitude professionnelle*, i.e. vocational training diploma.

their employees on the part of outside institutions who are attempting to meddle in the direct employer-employee relations. The companies which have the most highly codified relations with their labour force are those inside Besançon which draw on a truly urban labour market in which the employer is not personally acquainted with the employee before he takes him on, and where labour moves easily from one company to another. These companies are more capital-intensive and are more likely to manufacture components, and this means that they are more closely connected to the metal industry where conventional classifications are very firmly established. It is therefore these companies which have played a decisive role in breaking down the traditional crafts in watchmaking (titres de metiers horloger) that have "lost their value" as a result of technological change (quartz), and in substituting the more general classifications of the UIMM (Union of Metalworking and Mining Industries).

2. THE CODE AND THE TOOL: TAYLOR'S MACHINERY

This examination of the coding of occupational identity and, more generally, the operation of statistical recording has made it possible to compare a whole series of operations which produce code forms. The attempt has been to look beyond the differences in the nature of the coding (whether statistical, administrative or legal) and the variables that have been observed, and to relate them all to the common function of producing standard forms which permit the establishment of equivalents – i.e. the stable and economic articulation of these forms.

Such an analysis is helpful in giving an account of the limits of statistical recording and the ways it might be improved (Desrosieres, Goy and Thevenot, 1983). However, it is not epistemological considerations that are of most interest in such an account of form-giving operations. What has been said about the savings that might be expected from the use of such forms, and especially from the links they permit with rules of a legal, administrative or technical kind, suggests that a theoretical framework is needed in order to give an account of all of these operations from the standpoint of the economist.

F. W. Taylor's *Principles of Scientific Management* (1967) has been used to develop this theoretical framework. There have been numerous exegeses of elements of Taylor's book and many of its contents have frequently been condemned, but the text has not previously been used in the manner suggested here. One of the most difficult aspects of this study has been the effort of reconstruction needed to relate different kinds of coding to the same model, and in writing his book Taylor was similarly led to link these different objects. The operation was, of course, made easier by the fact that he was writing a *handbook*, which is a work intended to produce a set of systematic and unified rules out of a collection of disparate habits. Handbooks are, moreover, frequently based on the notion of the tool which is the most rectified state of habit and custom.

Taylor's handbook, therefore, contains a particularly large repertoire of form-giving instruments, all of which, as his text makes clear, need to be carefully adjusted so that they work together to produce what Taylor calls "the mechanism of scientific management" (p. 122). Among the instruments noted may be mentioned (in an order discussed further below):

– "*the implement*": Taylor stipulates that a standard implement should be developed using the empirical forms given to the existing tools and in the light of their respective performances.

– "the *adjustable scaffold*" (for bricklayers), which is an addition to the preceding tool (p. 80).

– "elaborate *slide-rules* (...) *especially made* for the purpose of determining the capacity of metal-cutting machines" (p. 99).

– "*implements* and *methods* for properly making time study".

– "*books*" and "*records*": "the practical use of scientific data also calls for a room in which to keep the books, records, etc. and a *desk* for the planner to work at" (p. 38).

– "*experiments*", leading to "the *establishment* of (...) *rules*, *laws* and *formulae* which replace the judgement of an individual workman and which can be effectively used only after having been *systematically recorded*, *indexed*, etc. (pp. 37-8).

– "the *task*", which lays down not only what must be done, but how and in what length of time, and which therefore provides the workman with a precise yardstick of measurement.

– "the *written instructions*" on an "*instruction card*" which is given to the workman and provides detailed indications of the best way of doing each job. The instructions are drawn up in advance by the special "*planning* department".

– "the *bonus* and *premium*" which are to reward the workman whenever he carries out the *task* in the time laid down (p. 122).

– "writing and talking" (with a view to) "educating workmen" (p. 27).

– "the *scientific selection* of the workman" (p. 43).

– "the shoulder to shoulder contact" (p. 27) and the "close, intimate personal *cooperation* between the management and the men" (p. 26).

This is in many respects an odd list, made up of heterogeneous objects taken from many different fields of activity. In it are to be found objects used in production on the shop floor, instruments, plans, conventions, scientific formulae, school precepts, ways of giving instructions which are close to military orders, methods of payment to be used in companies, principles, advice and examples to follow when deciding what action to take. It is even difficult to categorize these objects and many different terms might be used to describe them. Yet Taylor brings all these objects together into a single mechanism so that they become articulated parts of a single structure, and it therefore seems essential to use a single theoretical model to describe them all, which would explain how they fit together and what economies are to be expected from their introduction. These *forms* may be either machine-tools or rules of conduct, made of very different materials, cast in metal or written on paper (Callon and Latour, 1981). But beyond these immediately perceptible differences there is a further characteristic which distinguishes these forms–and this explains the order of the list above–which might be called a rigidness or inflexibility (the ability to resist efforts to distort, adjust or negotiate them). It is clear that a machine helps to reproduce, with the minimum of human intervention, a state of relations between standard objects (in this instance raw and manufactured materials). And in general, a "good

form" is one which fulfils this requirement, as is clearly shown with the case of the law.[4]

3. A BROADER DEFINITION OF INVESTMENT: INVESTMENT IN FORM

This section will expand on the outline above by looking at the various instruments listed under the model proposed, as forms which arise from investments. These need specification in such a way as to take into account a range of forms which includes tools, wage-slips, trademarks, instructions, training and habits.

Economists have usually conceived of investment as depending directly on a definition of the capital whose growth is measured. The conventional imagery peculiar to the teaching of economics consists of formulations which are half way between theoretical formulae from which they take their formal rigour and *ad hoc* applications to examples which attempt to provide realistic instances, and such imagery makes a clear distinction between capital and consumer goods. Thus illustrations based on hypothetical desert islands show that in subsistence economies there is a clear division between natural resources and capital goods, between the water and the pail. However, this distinction becomes less clear cut when the initial stocks of raw materials or cash advances for wages are taken into account as they are by the classical economists. Such assets are not included in the modern definition of investment which excludes working capital and only takes account of the growth of fixed capital, that is durable production assets. Furthermore, the example of consumer durables such as motor cars suggests that although they do not count as investments, unlike real estate, references to production—that is, to the type of agent taking the investment decisions—do not provide the most useful distinction on which to base the concept of investment. There have been many proposals to stretch the definition of capital to include knowledge that is acquired, as in the notion of human capital, and the fact that patents are counted as assets shows that a more satisfactory definition of investment is not supplied by the distinction between material and non-material goods.

However, *lifespan* does appear to be a fundamental characteristic since it is this which determines whether capital is fixed or working. It would therefore appear that the productivity which should derive from the "sacrifice of consumption" and the "roundabout method of production", and which is more often illustrated than explained in the literature, depends on this very engagement of temporary liquidity in a durable asset. What is suggested here is that it is such an immobilization which permits the fixing of a relation that can be reproduced between, for example, certain forms of input and output, and leads to the economies of labour looked for from the investment plan. Such an investment cannot be thought of simply as a material

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[4] The prescribed forms must be respected because they are what enable the distinction between a "formal" and "informal" act, between an acte solemnel (an act such as marriage which is only valid if accomplished within certain forms before a clergyman or registrar) and an acte consensuel (which may be a private agreement or contract needing no special forms). Forms guarantee a result, i.e. a relation with other objects, whether such forms are "legal", "probative", "capacitative" or "executory" (*forma dat esse rei*),

form, like a machine, since it also requires standardization, the definition of norms and the codification of input and output. Because there is a need for articulation between the exploitation of the tools and the form-giving operations which make them function, there is every reason to put forward a definition of investment which can take account of all of these operations, whatever the material nature of the forms produced. From this point of view, it would appear that the most relevant way to conceive of investment, which takes account both of the classical use of the term and the extension of its meaning, is as a costly operation to establish a stable relation with a certain *lifespan*. One illustration of this definition of investment might be the purchase of a patent, since this is an expense which gives the right to reproduce a particular form of a more or less material kind (depending on the kind of patent) over a certain period of time. The monetary equivalent, which is rendered objective by the transaction of purchasing the patent, makes this example a particularly clear illustration of this definition of investment since it means that it is counted as a fixed asset or a capital immobilization. Classical references to "sacrifice" in theories of investment and interest rates may be reinterpreted within this framework, even if the outlay is not considered an establishment cost or a financial commitment, but as a sacrifice of some other more immediate expenditure or of unproductive savings as in Senior's "abstinence theory of interest".

By forging a monetary equivalent between goods that become disposable at different dates, the financial market reduces the temporal dimension of investment using interest rates as an operator. As is well known, Fischer, by putting forward the concept of temporal preference which results from the relation between the amount of future revenue as an "equivalent" of an immediately consumable unit, formalizes for the consumer the counterpart of the producer's "rate of return" on investment. He reconstructs the classic conditions of equilibrium on the basis of a market composed of goods disposable today and goods disposable at a later date. The projection of the temporal dimension onto the realm of goods, which tends to disguise its specificity, is nevertheless linked to the "investment opportunity principle" of converting present revenue into future return. By making this "capacity" derive from the operation of establishing economic regularity at any given moment, it becomes possible to recognize it both in the investor and in the consumer who has committed himself for a certain period by sacrificing immediate consumption. In his discussion of "binding oneself" or "precommitment" in *Ulysses and the Sirens*, Jon Elster emphasizes the human "capacity to relate to the future" and to calculate the "global maximization that requires by-passing a local maximum" (Elster, 1979, p. 10).[5] As Leibniz observed: "Appetitions are like the path of the stone which flies straightest toward the centre of the earth, but does not always take the best road, being unable to foresee that it will meet with rocks that will break it; whereas it would have come closer to its end had it had the

[5] Like the definitions referred to above which were based on terms such as "abstinence" and "sacrifice", Leibniz's contrast between "reason" and "sentiment" or between "will" and "pleasure" is taken from ethics. And it is ethics which provide the *rules* for living, that is formulations made stable by written or spoken repetition, some of which are almost as firmly laid down as legal principles.

wit or the means to turn aside (...) which makes us know that it is reason and the will which lead us toward happiness, but sentiment and appetite lead us only toward pleasure" (Leibniz, 1875-1890, vol. 5, pp. 175, 182, cited in Elster, 1979, p. 10). Elster discusses the reasons for "using rules rather than discretion in formulating economic policy": cost of information, cost of adjustment, cost of uncertainty. He provides examples of institutions which, in his view, may be considered as "devices for precommitment": the central banks, in the British and American systems, who decide on monetary policy at a distance from the political sphere), periodical elections which are not plebiscites or a constituent assembly "that lays down the ground rules to be followed by future generations".[6]

4. THE AREA OF VALIDITY OF THE CODE FORM

If Taylor's list is given further consideration, it becomes clear that lifespan is not sufficient to describe the effects of investment. Thus the "written instructions" drawn up for the workman may have the same lifespan as the "wage rates" but they differ insofar as the written instructions are specific to the company, whereas wage rates may be applied over a whole industry through wage agreements, or may even be nationally applicable when agreements such as the SMIG[7] are introduced. This means that a further important characteristic which must be taken into account is the area over which a form is valid as well as the length of time for which it is valid. The larger the area of validity, the more likely it is that established forms will be interconnected and the greater the savings that may be expected from the investment. As a general rule, the two characteristics of investment that have been proposed here (lifespan and area of validity) go together. Thus an individual's personal action is

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[6] Elster is most concerned to explore the limits of rationality and irrationality in human behaviour and does not, therefore, examine the form-giving activities which make up commitment. Nor does he consider, as has been attempted here a comparison between investment and other operations designed to set up tempo;al regularity. Thus, in his axiomatics of commitment ("binding oneself"), Elster puts forward a condition which he believes must exclude investment from his conception of commitment: "If the act at an earlier time has the effect of inducing a change in the set of options that will be available at the later time, then this does not count as binding oneself if the new feasible set includes the old one" (p. 42). It would, however, appear that this condition only excludes investment if investment is defined (as it is by Elster) as "any sacrifice of present goods in order to make *more* goods available later on" with no consideration of the form-giving operations needed to establish a highly equipped relation of production as so many operations to reduce the set of what is feasible. For it is surely such a reduction, along with the increase in predictability that accompanies it, which is the source of any yield from investment.

[7] *Salaire minimum interprofessionnel garanti* (i.e. national guaranteed minimum wage) was created in 1950 and was replaced in 1970 by the SMIC (*Salaire minimum interprofessionnel de croissance)*, (i.e. national guaranteed increasing wage) which is fixed in relation to the rise in the cost of living and also raised every year on Ist July in relation to general economic conditions.

fleeting and of limited impact; it has only momentary significance within the context of personal interactions and affects only the individuals involved. However, an individual may give this action a less peculiar and more standard form if, for example, he *does something remarkable* which is intended to be reported and which will therefore acquire greater validity and lifespan (as a result of being recalled).[8] Conversely, international time is a standard form of exceptional stability and universality which may seem obviously useful and necessary, but which was in fact only set up after a long period of hard work (Zerubavel, 1982). Thanks to this example, some idea may be gained of the cost of investment required to achieve standard time, without which other investments which depend on regularity could not have taken place. The development of heavy industry at the end of the nineteenth century is one investment which obviously depended on such regularity (Thompson, 1967), and an even better example is Taylor's machinery which is clearly built around the measurement of time. The creation of a time form which is valid over a large area depends on the articulation of a number of different forms such as the technical instruments and scientific formalizations[9] used to create Greenwich Mean Time, relations of equivalence equipped with communications networks (mailcoach, telegraph, railway, etc....) in order to extend the validity of this time, a legal definition of States in order to create standard time zones, and national and international institutions *to agree about time*.[10]

Between the most universal of forms such as measurements or international law, and the most individual of forms such as personal interactions, there exist intermediate forms with lesser lifespan and validity, such as company wage scales drawn up in the way described above, or company training which carries no State validation, or the

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[8] Both this observation and the remarks on general and individual forms owe a great deal to Luc Boltanski's work on the technologies of representation (Boltanski, 1983), and to his current research into the way individuals can be *businesses*, that is, may construct individual causes with general value.

[9] The treatment of scientific methods as some, among the several, methods used in the "social construction of reality" is a major topic in the work of ethnomethodological sociologists, see. e.g. Cicourel (1964), Garfinkel (1967), Berger and Luckmann (1967). For a very stimulating analysis of the techniques for consolidating scientific proof see Latour and Woolgar (1979).

[10] The work of uniting the world offers many examples of how code forms articulate with forms that already exist. At the 1884 conference to choose a prime meridian to be used worldwide–that is, in all the countries which had diplomatic relations with the United States–the British and American delegates "repeatedly msisted on the fact that choosing Greenwich as the prime world meridian would entail the least modification of the system already in use, whereas choosing a different meridian would only add pointless confusion to the existing expense and other inconveniences" (Zerubavel, 1982). The French delegate unsuccessfully opposed this realist argument based on the savings to be made by linking up with mvestments already in place, by an appeal to a wider cause which was that the meridian must of necessity be neutral.

network of customers for a particular trademark, or a set of "house rules", or, indeed, the "standardized labour implements" Taylor recommends should be introduced throughout a company (Taylor, 1967, p. 66). However, these two major characteristics are not found together in the case of some forms, and that is why it is necessary to distinguish them. Thus the craftsman's own personal tools may be an investment with the same lifespan as the standard tools, but they will not have the degree of standardization which would allow the equivalents to be valid over a large area.

When standard time was given a form, the importance of what was spent on investment was clear even if the economies were achieved by recouping earlier investments of a scientific, technological, administrative or legal kind. Some of this expenditure can be expressed in monetary terms and can therefore be easily quantified. This would be true of the installation of plant and machinery (measuring equipment, the construction and connexion of networks, timetables and hours of work, etc.). Other kinds of expenditure, such as the *personal* time spent in negotiations to reach agreement, are less easy to objectify. It is interesting that the more individual the investment, the greater the amount of personal time that has to be spent initially. With the most individual of investments, time is spent gaining the habits and experience which make up the skills or the network of relations belonging to an individual or a company. This points to another possible mode of investment which is not an immediate and costly acquisition but training that takes place over a period of time, in order *to get into a habit*, a relation forged as a path is traced by repetitions which fix its form. This mode of investment can affect the established forms which will not be strongly objectified if there is no complementary material investment. Bourdieu's discussion of the difference between "embodied" properties, known as the habitus, which function, for example, in transactions in the local markets of traditional societies, and the *qualifications* which set up a unified and objective market (Bourdieu, 1980) demonstrates that this feature of the established form is extremely important. There is therefore a third characteristic of investment in form which must be taken into account, linked to the way it is constituted and the extent to which the form is objectified or materially "equipped", the extent, in other words, to which it exists in the form of anonymous implements by which it is restricted, whether these implements are of a conventional technological kind, or are of a legal, scientific or other nature. It is clear that the equipment derives from and contributes to the fixing and diffusion of a form, and that it is therefore generally linked to its lifespan and area of validity. But distinguishing this characteristic does help to illustrate a number of cases. Thus the etiquette which "civilizes manners " (Elias, 1973) is, like a code of practice, a set of relations practised within a given social group, which has great stability (since generation conflicts are often what break these relations). However, a code of practice is much more objectified than a code of behaviour and it is therefore much more restrictive. However, the difference between these codes may also be gauged in relation to their areas of validity. Thus the law relating to codes of practice is not linked to common law which has a national rather than a specifically professional or occupational validity. Similarly, habits or skills peculiar to an individual or an occupational group

are more or less flexible to the extent that they are more or less fully equipped with tools which, even if they are specific, ensure that such skills and habits can be handed on from one person to the next. The significance of such equipment became very apparent through study of how occupations in the health service were constituted. The less equipment there is, the more difficult it is for the form to be anonymous, so that the form remains highly individualized and is sometimes even invested in a particular individual, which implies high maintenance costs in terms of personal time spent. The same may be said of the time taken in the repetitions which create *fixed habits* such as that of "soldiering" (i.e. skiving) (Taylor, 1967, p. 24)[11], or the interpersonal relations which only function when individuals see one another frequently and which break down more quickly than material implements. Because no comparable equipment is available, such relations cannot easily cease to be individual. Thus a business finds it easier to sell its "custom" to another if its custom is maintained through a network of dealers and an established trademark. Similarly, personal relations can only be handed on if a general institutional objectification takes place and an anonymous equivalent, such as an educational qualification, an association, or a marriage alliance which creates an equivalent at the more limited level of the family unit, can be produced.

5. INVESTMENTS IN FORM IN THE USE OF THE WORKFORCE

An analysis of Taylor's principles along the lines suggested here is of particular interest because these principles establish a radical model of the company in which it is presupposed that the company controls every investment (in the sense the term has been given here) relevant to the use of the workforce. Thus the employee's individual activity is changed into the time-equivalent form which makes possible economic connexions, and these may occur through technical relations (by means of implements), regulations (through hours of work) and social and contractual relations (through wages). The key form in Taylor's system is the task which makes possible the elementary coding of the individual employee's personal actions. It is a stable form that is equipped by means of written instructions valid throughout the company which have nothing to do with the qualities which make up the individual employee's identity.

"Perhaps the most prominent single element in modern scientific management is the task idea" (Taylor, p. 39). And if Taylor lays down ways *to get the workman to fulfil his task*, it is because in his view a workman's individual activity is something which falls outside the

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[11] In order to indicate how relatively widespread this habit was and to give some idea of the extent of this form's area of validity, Taylor mentions how it had been labelled in certain standard ways in the different countries: "Underworking, that is deliberately working slowly so as to avoid doing a full day's work, 'soldiering' as it is called in this country, 'hanging it out' as it is called in England, 'ca canae' as it is called in Scotland, is almost universal in industrial establishments" (p. 13).

general forrn of the company time-equivalent, and must therefore amount only to unprofitable "soldiering". Thus in some sense Taylor attempts to create the material conditions for a production function which corresponds to the formulations in economic theory, with a work factor that is assimilable to a quantity of time which can be consumed without any resulting workforce immobilization. As has been seen, this model implies significant material immobilizations in the form of machines which the production function could account for, but also a series of other investments which do not count as investments but which are nevertheless sustained by the company. Theoretically, however, the company is not responsible for the costs which arise from outside investments concerning the people employed, whether these are nationally valid (as in the case of educational qualifications) or whether they are constituted in a more individual way inside the family or in a company in which the employee previously gained work experience.

Experience with this model has shown that it is very well suited to a workforce which is not highly skilled and is not inclined to invest in work. In the examples Taylor provides of how recruitment should be conducted, he emphasizes that the ideal workman for the task is "of a mentally sluggish type" (ibid., p. 46) and has no special abilities. Similarly, his reward should be as "liquid" as his service; it should be immediate and should involve no form of participation since this would suggest commitment over time. If lack of skill (in the formal sense of the term—"skill" meaning a form having general value) is required of the workforce, recruitment can be extremely economical and Gan be based on a link with the forms that are instituted, in just the same way as recruitment which might depend on the requirement of a standard skill based on educational qualifications. These days it would seem that the standard recruitment of unskilled labour is economically carried out by such institutions as the ANPE (Agence nationale pour l'emploi) or the *Pactes pour I'emploi*[12] which primarily supply companies that need the kind of workforce similar to that in Taylor's model (Mehaut, 1982). As far as the employers are concerned, "the essential advantage of the youngsters recruited via the ANPE is precisely that they have no particular skills" (Faguer, 1982, p. 10). This might be expressed in a different way: the ANPE as an institution can only select on the basis of variables which are compatible with what might be described as its "operating model", which, in the case of this national institution, means the Stateregulated variables legally provided for by contracts of employment. This explains the many failures when the applicant turns up *in person* at the company's of fices. They are the results of "misunderstandings", that is, they are due to undesirable *qualities* (such as nationality or sex) which had not been specified, or properties that cannot be formalized and which cannot be objectified within the framework of this model. Preferential recruitment of this kind is therefore an example of an economic relation made possible by general investment in durable and compatible forms— forms such as the rationalization and formalization

[12] Employment agreements between the State and private industry in the form of government measures designed to encourage the employment of young people by means of subsidies to companies which take them on.

implemented in Taylor's system and the legal and administrative generalizations of a public institution. The relation which is created is based on forms with general validity (such as "civil status" (age, sex etc.), educational qualifications, collective agreements, and so on) which allow the two models formalized above to be rendered compatible and therefore to be linked. It can thus be seen that it is a complete illusion to look on the ANPE in a purely functional way as a public recruitment service for companies of small or medium size that do not have well-established personnel departments. In fact, small and medium-sized companies work principally through investments of a specific kind requiring personalized recruitment and interviews. These are conducive to the detection of personal and often physical properties which do not result from any establishment effort, and on them the employer bases the employee's engagement[13].

However, even Taylor's model which is characterized by substantial investments in general and durable forms for making use of the workforce, implies some employee training so as to make possible these form-giving activities. When Taylor sets out his principles, he continually moves from the techniques for setting down the "rules", "laws" and "formulae" (ibid., p. 36) on "instruction cards" given to the workmen, to the "education" techniques which ensure that the workmen observe these rules. And when Taylor wishes to instil the "task idea" into the workman, the latter's education is acknowledged to be more likely to succeed if it connects with earlier educational investments in training in the explicit, the objective, the rule-governed and the rational[14].

Similarly, contrary to the classical analysis of the work factor, the encouragement offered by financial rewards is not seen as sufficient to ensure the effectiveness of the measurable forms on which Taylor's system depends. The workman has to be trained in measurement (p. 94), a code form which must exist prior to the

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[13] Thus the amount of recruitment which is done on the basis of personal acquaintance decreases markedly in relation to the size of the establishment (Benarroch and Espinasse, 1982). As far as unskilled workers are concerned, there are two main modes of recruitment, the formal recruitment through the ANPE mentioned above, and the other through personal acquaintance with the employer or a member of the staff. It is probable that the respective use of these two methods depends on the different degree to which formal management rules are applied (and therefore also on how large the company is). An extreme example would be that of small companies which wait until they have recruited an employee who perfectly fulfils all their particular requirements before they commit themselves to a contract (or frequently a sub-contraction) to produce something so specific that It requlres such an employee.

[14] "Each of us will remember that in his own case this idea was applied with good results in his schoolboy days (. . .). The average boy would go very slowly if, instead of being given a task, he were told to do as much as he could". The lifespan of this form will be noted. Today it has become so totally naturalized that one always talks of describing tasks in what a job involves, as though now the idea of the task were taken for granted.

introduction of tasks, machines, rules and so on. In order to transform individual time into a general time valid throughout the company, equivalent to the measurement of machine time, Taylor has to train the workmen into accepting his model, and has to create the links which would establish what is in his *interest*:

> The average workman must be able to measure what he has accomplished and clearly see his reward at the end of each day if he is to do his best (p. 94).

However, within the limits that have just been discussed, Taylor avoids linking his machinery to investments controlled by the workmen. He in fact thinks that the workman is incapable of controlling the passage of time, the very thing which, as has been seen, creates the opportunity for the commitment which underlines all investment. Moreover, the thing which Taylor fears most of all is that the individual employee might control an area of validity beyond the individual. He fears, therefore, the group of workmen.

He recommends that workmen should never be talked to as a group, that they should not work together in groups of more than four, and he suggests that collective consultations and voting can have disastrous consequences and should be avoided at all costs. He condemns the group investments that the workmen in his factory had achieved in the form of an "understanding". "Every new workman who came into the shop was told at once by the other men exactly how much of each kind of work he was to do, and unless he obeyed these instructions he was sure before long to be driven out of the place by the men" (p. 49). Taylor states that as gang-leader he was able to get round this long-established rule because he was in no way a member of the group (the area over which the rule was valid), since he was not the son of a workman and had not previously been a workman himself. Thus Taylor strongly recommends breaking with established social groups, however entrenched they may be, whether such groups are informal workplace alliances or established trade-unions. The fact that he is so emphatic suggests that expenditure and effort are required in order to undo the investment in forms used for managing the workforce and the instruments which create the social groups needed to establish collective personae (Boltanski, 1982). Most commentaries on the introduction of Taylor's methods do little more than set out what happens when workmen lose control of the work process. In other words, they are mainly concerned with the break, recommended by Taylor, in the link between the forms of work management and groups that are formed. But a detailed examination of the spread of Taylor's methods in the United States shows that such a break was not the only result to occur (Stark, 1980). Although Taylor may have recommended rules for relating productivity and wages on an *individual* basis, the spread of Taylorism tended to encourage the growth of collective negotiations and to strengthen the forms of representation of the social groups affected, including skilled workers. Stark therefore disagrees with the view that is most strongly upheld by Braverman (Braverman, 1974), that as a result of Taylor's methods an unskilled working class took the place of a skilled working class. In fact, the skilled workers' extreme hostility towards any attempt to abstract their skills into Taylorian forms controlled by work engineers' was transformed into

cooperation when the United States entered the First World War. At that time, the flood of orders emanating from the State required regular, guaranteed and standardized production, and this encouraged the introduction of Taylor's forms as well as increasing the influence of trade union institutions and more general forms of negotiation (wage boards, collective negotiations, etc.) in return for greater discipline among employees (strikes were outlawed)[15]. During this phase, skilled workers were able to improve their wages and position, thanks to the increase in production, and to initiate cooperation with the engineers' groups which had itself grown up mainly through the introduction of Taylor's methods. With the end of the War, and State orders, the most general forms of regulation, those which took place at national level, were given up and the unions lost some ground. However, the form of productivity agreements between trade unions and industrialists was still commonly found in the textile industry, the railways and the machine tool industry (Stark, p. 112).

The history of Taylorism demonstrates the advantages to be gained from putting forward a theoretical framework in which economic analysis can take place and which allows a technique form to be related to a method and to a social group. It has been seen that Taylorian investments in form, although they were mainly carried through by the companies, established highly "equipped" forms with an extended area of validity, such as the definition of a standardized task, the coding of time, the formulation of rationalized relations by experts, etc. It can therefore be quite easily understood that such forms articulate extremely well with more general forms established or validated at national level, such as scientific rationalism, legal formalism, bureaucratic regulations, and national representation for social groups in arenas established for collective negotiations. The same may be said of the articulation that has been noted between the spread of Taylor's methods and the waves of standardized orders coming from the State in time of war.

Similarly, it is not difficult to understand how the spread of Taylorism meant a phasing out of specific investments in the customs and rules of work built up by skilled workers at time as more nation-wide forms of union representation were strengthened.[16]

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[15] "By establishing strong ties to the State, the trade union leaders had gained the necessary protection to expand their organisational base without having to alter the organisational form of that base from craft to industrial uniomsm. Union membership thus rose dramatically, but the terms on which this occurred meant that union officials agreed to discipline their membership and prohibit strikes. In order to gain some benefits for a dissatisfied rank and file, union leaders were moved to strengthen further their connexions 'at the top' through wage-setting government bodies and industry-wide collective bargaining" (Stark, 1980, p. 109).

[16] Stark continues Montgomery's work (1976) and points to different "levels of control" among groups of skilled workers who did indeed benefit from the differences in range of validity and the degree to which forms were objectified that have already been discussed: "The first level of control was achieved through *informal* organisation at the local level" (my italics). The "mutualist ethical code", as

6. WHAT DETERMINES FORM INVESTMENTS IN COMPANIES

Though he does not realize it, Taylor unwittingly defends a model which is diametrically opposed to his own when he writes, in the Principles, that the worker in the factory,

> instead of using every effort to turn out the largest possible amount of work, in a majority of cases (...) deliberately plans to do as little as he safely can (...). [Yet] wherever an American workman plays baseball or an English workman plays cricket, it is safe to say that he strains every nerve to secure victory for his side. He does his very best to make the largest possible number of runs. The universa/ sentiment is so strong that any man who fails to give out all there is in him in sport is branded as a 'quitter' and treated with contempt by those who are around him (p. 13).

Thus Taylor offers a glimpse of a model quite foreign to his thinking, a model which is based not only on the rules of the game but on the qualifications of the players, and one which leaves a large amount of room for the play of habits and practices which are hardly objectified except as tactics. In this model the company depends on investments which are at least partially borne by its employees. It may reward qualifications validated by the State by, as it were, renting them out, or may make economies by using investments with more limited validity that are less easily capitalized on, but not less productive. Thus large companies such as multinationals with a very clear public image, whose workforce management resembles the "game" model and facilitates investments specific to the company, tend to avoid recruiting staff who hold nationally validated qualifications which are therefore valid outside the company. Though they do not follow Taylor in believing that skills and qualifications serve no good purpose, they prefer to realize family investments and find that recruiting people known to them is an appropriate way of doing so. But they do, therefore, encourage in-house investments such as a company hierarchy with its own job titles, carrier planning etc. (Desrosieres

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Montgomery terms it, included rules of conduct about production quotas, relations with the boss and with workmates. Certain groups of skilled workers who were union members extended and consolidated such rules within occupations. "In the last decades of the century, the provision of the craftsman's moral code developed a higher form of craft control in the exactment and enforcement of umon work rules which the craft unionists termed 'legislation'. These work rules Indicate the establishment of a second level of control forged through connexions between groups of workers within the same craft in different locales." Finally, the union institution helped to formalize and generalize these rules: "The third level of control emerged when sympathy strikes involving members of different trade unions were conducted to support attempts to enforce these work rules or to win union recognition. Skilled craftsmen were thus forging important connexions across locales and industries" (Stark, 1980, p. 99).

and Pialoux, 1983, pp. 81-2). The presence of long-standing employees is a good indication that such a model has been adopted (Eymard-Duvernay, 1981).

When a management model is changed, this provides an excellent opportunity to examine such investments. Thus Gouldner's classic account, which applies Weber's model of bureaucratic organization to an industrial company, is based on a study of what happens when a new boss takes over and tries to *undo* the forms of the previous organization ("the indulgency pattern"). The organization in question could have been described as having forms and practical relations which were not strongly objectified, not heavily "equipped", and, contrary to all that Taylor's principles recommend, as making great use of specific investments in relations outside the company, such as religious communities, voluntary firefighting organizations, sports teams, and so on. Certain specific properties were even less formalized: they were formed through repetition and habit and gave rise to what are commonly called "roots". As has been said elsewhere, seniority is a good measure of this kind of specific, weakly objectified, form (Eymard-Duvernay and Thevenot, 1983a). The company studied made extensive use of relations formed in this way as well as of family connexions which were systematically taken into account in recruitment. Such connexions could cut across the establishment's hierarchical divisions, and the company's investment in specific forms was not great. The company regulations were neither known nor observed and time had not been established as a unit of account for measurement and control. The division between the company's time and the employee's time was not marked by an alternation of work periods and breaks.[17] The change of management involved a number of costly investments in forms specific to the company. The limits of the company were established in a more hard and fast way as was the distinction between what belonged to the company and what was the employee's private property. This led, for example, to the sacking of a workman (although he had been with the company for twelve years) who was accused of stealing a case of dynamite. It also involved recruitment based on criteria that were "impartial" with regard to family or other connexions, the introduction of daily and weekly reports and of company regulations, the strict application of clocking on and off, etc. Unlike his predecessor, the new manager was a graduate, and this accorded with Weber's model of legal authority in which jobs which are thought of as "offices" are articulated with the qualities of the holders which are "guaranteed by diplomas certifying technical training" (Weber, 1964).

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[17] "Your free time is your own (. . .). When there's work to do they expect you to do it, but otherwise they leave you alone" declared one worker interviewed (p. 47). Similarly, an exhibition space served as a sort of "informal" private area reserved for the use of employees suffering from the effects of accidents (including accldents whlch occurred in their homes) which allowed them to have a higher mcome than if they spent time at home recovering. In the same way, there was no clear dlsbnction between company property and the employees' private property as was indicated by the fact that moonlighting was widely practised in this company.

In the case of the company (an "industrial monopoly") studied by Crozier as an example of bureaucratic organization, which therefore derives from the previous model, the opposite transformations were to be found. Forms that were characteristic of the Weberian bureaucratic type, because of their "generalized formulation" and their "written recording", were phased out and replaced by specific forms valid within an occupational group: "The maintenance workers have succeeded in getting the *plans* of how the machines work and the maintenance *guidelines* removed from the shop floor, and have got an agreement that maintenance policy will be based on individual adjustments throughout" (Crozier, 1963, p. 90) (my italics).

Unfortunately, Gouldner's frame of reference is restricted to work relations and does not allow the preceding observations to be linked to others which concern traditional economic variables. He only remarks in passing that big investment in new materials (1.5 million dollars in 1950) was accompanied by the establishment of new code forms. However, if one accepts the idea that creating a rule is as much of an investment as purchasing a machine, then one is led to re-examine, in the light of this model, some company functions which are traditionally contrasted with production functions.

Thus the creation of a personnel department is an investment which implies that jobs will be classified, and rules or objectives for recruitment, job mobility, retirement, etc., will be established. One detailed example might be taken from the study (Eymard-Duvernay and Thevenot, 1982) of what happened when a cement group that was very capital intensive and produced a very standardized product, partially took over a company which made ready-mixed concrete for use on building sites. This company therefore acted as an agent or, in some respects, a wholesaler dealing with different customers scattered throughout the country. The cement group, through the activities of one of its executives who was appointed director of the company, tried to match the company's forms of activity to those of the cement producers who supplied it. The study referred to examined some of these form-giving activities which involved "working on the labour force", such as investing in new "tools" (as the director himself put it) or getting a works agreement on working hours and their equivalent forms.

The new director also tried to replace the informal negotiations between vendors and purchasers by formal rules based on objective criteria. The fact that cement is a very standard kind of product was helpful in drawing up such rules,[18] as were the large number of orders

[18] Conversely, Crozier observes that in the company he studied, "the lack of homegeneity and the variable quality of the raw material" had unpredictable consequences (which would halt the machines) (Crozier, 1963, p. 130). If one accepts Crozier's proposition that "each individual's power depends on how unpredictable his behaviour is and to what extent he can make the achievement of common objectives uncertain" (id. p. 10), it might be said that variability, which marks the hmits of the formal laws of the company model, demands the use of more speclfic and more personalized forms in order to make possible the interpretation the stabllization of

for the standard product which conformed to standard norms. This therefore provided a further example of the articulation between the establishment of generally valid forms and the government orders and contracts already referred to in the above discussion of the conditions which encourage the spread of Taylorian methods. On the other hand, personal habits articulate badly with such forms, and this was the case with one client, a site foreman, who had ordered some concrete and "guessed" the amount that had been objectively checked by the vendor. Some material investments were carried through, such as the computerization of production processes and of deliveries to outlying establishments (the production centres), and these necessitated accompanying investments, in form. Moreover, investment in computers is of a mixed kind, since it involves installing machines and also introducing rules and forms (especially the code form) that are compatible (Thevenot, 1983b). The job of technical assistant (*agent technique*) was, therefore, created with responsibility for ensuring that the highly regulated management of planning, and deliveries and contacts with customers, worked smoothly together. The job was therefore created to improve the company's negotiating position which the new director considered too dependent on the vagaries of customer demands. Both the *general training* of those who were recruited and a commerical *training programme* were intended to increase the degree to which negotiations could be regulated. These new technical assistants were not represented by the two trade union branches in the company, the Confederation General du Travail (CGT) branch to which the manual workers and the drivers belonged, and the Confederation General des Cadres (CGC) branch which included the supervisors and the managers. So the technical assistants created a Confederation Francaise Democratique du Travail (CFDT) branch. In addition, at the request of the CGT and the CFDT, jobs which included the word "technical" in their title were shifted from the first electoral college (composed of manual and clerical workers)[19] to the second electoral college (composed of supervisors). The director considered that with these electoral divisions and the unions they corresponded to (the CGT had all the seats in the first college but only a fifth of those in the second) he had a "more balanced structure".

Models which view capital immobilizations as the only productive investments that can complement or be substituted for the use of a workforce, cannot account for cases where it is not the capacity to produce but rather the opposite which determine employment–except in an indirect way, through the construction of "delays in recruitment" and the "cycle of productivity". This was the case in the company studied which wanted new equipment (bigger trucks) so as to increase productivity. This investment– i.e. the truck acquisition programme – could only be carried through by observing a long-established custom that the personnel department had changed into a rule, that job

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these variable events, and their articulation with this model Thus variability makes such investments influential and also gives great influence to the occupational group (in this case the machine adjusters) within which their vahdlty was constituted.

[19] An electoral college for elections to the various representative bodies such as the *Comite d 'entreprise*.

changes should occur as a result of natural wastage rather than redundancies. The setting up of an accounts department and the introduction of management methods are even clearer examples of specific investments designed to create relations and equivalents which guarantee regular functioning and links with compatible investments outside the company.[20] However, the operations which consist in "making the rules work" have nothing to do with such investment measures. This distinction generally implies that the holders of such posts have lower salaries and are different kinds of people as regards both their social origins and their educational qualifications.[21] It is also interesting that for those executive posts which include among their responsibilities investment in forms such as the constitution of rules and objectives as well as the articulation of these investments with forms that are valid beyond the company (finance, management, accounts), the most highly qualified executives are recruited. These are people who are able to capitalize on their education in a national market and are therefore accustomed to using standard variables. The foregoing analysis also makes it possible to reinterpret the distinction in the social organization of businesses between the "substantive norms" which govern the way a company works and which result from "decision-making procedures" and the "procedural norms" which govern the formulation of the substantive norms (Fox, 1971, pp. 28-30).

7. STATE FORMS

The preceding sections have attempted to outline an analytical framework which would allow a broad range of material or formal "equipment" to be related to a single model of *investment* in forms that are characterized by different parameters including their area of validity. Such an attempt is of interest primarily because it makes possible an understanding and a comparison of phenomena which are usually placed in a variety of different conceptual frameworks. Since these conceptualizations derive from a number of different disciplines, they tend to constitute objects which appear to be *naturally* very different: product, trademark, machine, capital, accounts, skill, qualification, collective agreement, etc. Taylor's machinery, as set out in his handbook, can easily be reinterpreted within a framework of analysis such as this which offers a good account of the conditions under which it will succeed or fail. Taylor's equipment sets up durable and standard relations that are

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[20] In his detailed study of work organization in seven mass production companies Durand notes that the two companies which have no methods department are those in which "all production has been computerized and automated" and one where "all organization is totally empirical" (Durand, 1978, p. 19), that is a company which makes use of the most general forms with no investment in specific forms, and a company which has undertaken no investment in forms whatsoever.

[21] Such rules are most highly regulated and automated in the "functional model" as opposed to the "professional model" (Benguigui, Grise and Mont3 ,).

hardened into material and formal implements and therefore become more productive. But it is only profitable if it is based on the use of forms with general validity, forms which are often public and inexpensive because they have already been constituted by the State, the *measurable* forms of the objects used and the anonymous forms, such as the civil status, of the individuals involved. The study of companies which do not conform to the Taylorian model but make use of their own more specific forms, which are particularly evident in the way they recruit and more generally invest in their workforce, suggests that great importance should be attached to the area of validity of the forms studied. Therefore, what will be discussed in this final section are the effects of extending this area of validity and the constitution of more general forms which will be referred to as State forms in order to indicate that their validity has been extended, even if they are not *State forms* from a strictly legal point of view. By examining how general forms are created and therefore how equivalents are produced, titles (titres) of monetary or other nature which regulate credit conditions in the interaction of people or collective bodies, it is possible to reveal the investments which take place prior to the creation of a market and to take a further look at the "imperfections" that neoclassical theories criticize or would wish to alter.

Numerous examples of investment in general forms are provided in the work of anthropologists on tribal councils "[that] are governed by conventions and persist in time" (Richards, 1971, p. 1), considered as "the machinery by which [group] decisions are reached". The implements supplied by established rules and repeated habits tend to produce an anonymous relation that is durable and material instead of an ephemeral personal opinion. Richards lists the component parts of this machinery: there must be a fixed meeting place, an unchanging spatial disposition of members and their groupings, a speaking order, standard rhetorical forms of address and formulae for expressing approval, the language and gestures of adjudication, and procedures for producing and recording a decision. The yield from these investments is clearly related to the form taken by the components of the machinery and the end products which, because they achieve general anonymity, prevent renegotiation of the decisions of the duly constituted body and sometimes even *confrontations*, i.e. the effective mobilization of individuals in the field (Boltanski, 1983). But in the case of less formally constituted councils, the alteration of decisions is avoided by very informal discussions consisting of a series of "mutually exclusive statements", without any *argument* that might bring out contradictions, which frequently lead to ambiguous decisions (Bloch, 1971, pp. 50-52). By examining the somewhat loose relation between the way such councils work and the actions that result from them, the basic conditions for the production of State forms become very clear. Thus, when a decision has not been formally reached by the council, it is the number of members who support the proposal which influences the action taken, even though there is no explicit mechanism for counting them such as the vote. It may also be an individual council member's "influence" which sways the decision so that the council becomes the place where relative influence is assessed and reassessed. Finally, because there is complete absence of investment in *representation*, results depend on counting individuals who turn out on the appointed

day in support of one or another of the proposals.[22] Because this council machinery tends to abstract from the personal and produce general decisions, it articulates with the constitution of collective personae—in other words, with the way individuals are represented. This is a fundamental relation which has already been emphasized, both with regard to the classification of the employees within a company, and with regard to the occupational and trade union groups involved in Taylorism, and it is central to the working of councils: "the principles by which membership of any council is fixed must be directly related to the forms of social differentiation in the society" (Kuper, 1971, p. 15). Kuper adds that this is a two-way relation: "social status may be affected by performance in council" (ibid.). In certain cases the principle of representation in the council is unified, and this may result in several councils co-existing each of which is formed according to different principles of classification such as age and lineage (Jones, 1971). But often this work has not been accomplished and heterogeneous principles of classification (women, strangers, elders, sects, trades, etc.) are to be found within a single council (Robertson, 1971, pp. 149-155).

Thus the working of State machinery such as this is indissolubly linked to the production of *qualifications (titres)*, that is, personal qualities which make equivalents possible and therefore allow an individual holder to be independently treated. Bourdieu's work has thrown light on the difference between these qualities, which make possible both equivalents in a unified market and economic calculation, and the "embodied" properties on which depend the "good faith economies" of gifts and exchanges between individuals (Bourdieu, 1980). His analysis of the build-up of confidence necessary for friendly transactions in which the purchaser may attach more importance to the choice of vendor than to that of the product whose quality is inseparable from that of the person selling it (ibid. p. 196), has been extended to include the system Or qualifications (*titres*) guaranteed by the education system (Bourdieu, Boltanski and de Saint Martin, 1974; Bourdieu and Boltanski, 1975; Bourdieu, 1978).

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[22] "The discussion happens as a series of mutually exclusive statements. One person makes a speech the gist of which is a proposal to come on a particular day Thls may well be followed by another speech which seems to be in support of the proposal and full of praise for it, but in fact contains, hidden within the mass of pohte sentences, a counter-proposal for another day. There is no argument and it is very dlfficult to realise that the statements are contradictory. What is more, no declsion seems to be reached at the time. However, if a large number of people mention one time rather than another, everyone knows that this is the right time. O en, however, the matter is left in the air and the chosen day is understood to be that proposed by the more influential man. In this way these contradictions may be tests in a power struggle between different individuals. Very often it is not clear to the partlcipants at what time they should turn up. If this is so, on the first day mentioned the supporters of one side will start to gather. If they are few, they will soon disperse. If, on the contrary, they are many, they will be joined by waverers and then the whole thing snowballs, until ultimately perhaps even the proposer of the alternabve day will be drawn in" (Bloch, 1971, pp. 50-51).

The now fairly widespread analogy between the process of educational expansion and monetary inflation is particularly productive in French since the word *titre* can mean not only a certificate, a title, an entitlement and a qualification, but also a degree of "quality" (alcohol content, gold standard, etc.). Thus as long as the definition is kept firmly in check, the use of the word titre may permit not just useful illustrations but fruitful comparisons. If one refers back to the definition of investment that has been put forward in this paper, it is clear that a person who has a title/entitlement as a result of a certificate does not have the same form as a financial title, since that form remains specific to the person who bears the title. However, since the State has instituted qualities which, although they are attached to persons, have the durability, the area of validity and the objectivity of law, this has economic effects arising from the establishment of equivalents similar to those observed with financial titles. Indeed, it is because the formalized title is so stable that it can enter into temporal relations of commitment and anticipation, just as it is because the extent of its validity is guaranteed by the State that it may serve to establish equivalents between people who are otherwise very different. Thus "qualifications inflation" serves as a convenient metaphor to describe their explosion only to the extent that no satisfactory account of the work of establishing this State form is proposed. But if the characteristics of this form are taken into account, this may explain effects similar to those observed with monetary forms. Thus small employers' frequent mistrust of educational qualifications, which is referred to in the various employment agencies in terms of a "disparity" between the skills and qualifications required and the content of the education and training received, may be explained by the huge gap between personalized forms of recruitment and those which are more objectified .

Under the first model, the employer whose company is run individually or on a family basis is concerned to maintain, in personal form, all the relations he uses to obtain and retain the services of an employee. Thus the properties which mean that an employee is taken on are recognized from signs which are not highly coded, are often physical, and may not even necessarily be made explicit. *If an employee were to be recruited on the basis of his qualifications (sur titre), this would be tantamount to giving him credit for (au titre) a qualification instituted by the State which creates an equivalent*. In such a case, the power relation between employer and employee is mediated through the qualificationequivalents that the State creates. Because of similarities with the effects of investment in general forms which serve as equivalents the process begins to resemble those that have been analysed in relation to money (Aglietta and Orlean, 1982; Orlean, 1982).[23] Indeed, Hicks' analysis of

[23] See especially their analysis of "central money", "homogeneous money" and "private money": "From a mechanistic point of view money either is or is not; we believe, however, that it is always in the process of becoming. It is a socialization process which may experience various degrees of extension, and at each of these levels

the effects of automatic borrowing facilities via bank credit might well be applied here through a comparison of highly standardized debt forms, regulated by the central banks, and the more private forms offered by the security markets (*titres financiers*). What has been described here as the costly investment in stable forms with general validity has the effect of creating spatial and temporal equivalents.

Aglietta and Orlean discuss this question from a similar point of view when they analyse the effects of equivalence (which they call "monetary arbitration") on property relations between social agents and the inflationary processes that result from them.[24] Within the limits of the comparison outlined above between an individual who has educational qualifications (*scolairement titré*) and a financial security (*titre*), it may be said that by means cf diplomas and certificates, the' State institutes forms with titles which make it possible for individuals to be equivalent, and also allow links with other code forms to be set up. This occurs, for example, when qualifications are "recognized" in the job classifications drawn up in collective agreements, and such a link is an excellent illustration of the fact that those who hold qualifications accredited by the State are able to get them generally recognized by employers. The result is that the power relation between the private employer and his employee is distorted in just the same way as the creditor-debtor relation is distorted through automatic bank credit.

It can therefore be understood why small employers refuse to accept the power shift implied by the recognition of educational qualifications and why they are reluctant to recruit employees on the basis of their qualifications (*sur titre*). If State qualifications were applied everywhere—if, in other words, no reduction in the value of qualifications occurred because of such refusals—whole social strata of qualification holders entitled to something from the State and to whom the State "owed" something, would have their negotiating position in employer-employee relations greatly strengthened as a result of the institution of the State qualification (*titre*) form.

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it appears in a qualitatively different form" (Aglietta and Orlean, 1982, p. 82).

[24] "Inflation is a situation in which the central authorities try to support the strategy of the hegemonic social strata which have become indebted. They do this by increasing the monetarization of deficits and therefore transforming the previously established arbitration between creditors and debtors. Creditors are therefore placed in a difficult position: they see their monetary receipts increase but not their economic power, i.e. their influence over productive activity. Indeed, the transaction A (j)—U (i), which means that the creditor j could use his financial capacity to acquire, through the purchase of the debt U (i), an interest in the production centre i, is prohibited by the structure of the centralized relation i/X/j. As has been seen, the end result of monetary mediation is the separation of creditors and debtors; thus no institutional procedure exists to allow such a transaction to take place. This is precisely the reason why centralization is able to ensure regulation" (Orlean, 1982, p. 98).

But when faced with these "State credits" that they do not control and which undermine their specific power to recruit a workforce, employers may adopt an approach more complex than purely and simply refusing to accredit State qualifications. Thus larger companies which have undertaken large-scale, specific investments in forms with regard to their workforce (specific job descriptions, work enhancement methods, company training and promotion programmes, etc.), do not recruit individuals who have State vocational qualifications with general validity, since this would cancel out the effects of the company's own specific investments. They may, however, take on holders of the baccalaureat as manual workers, thereby ensuring that the qualification loses some value. But they also ensure that it is made equivalent to investments specific to the company when they guarantee these youngsters with devalued qualifications a quick promotion to the posts of foreman or technician provided they do everything the company expects of them. The opposite process occurs, however, through "ratification" (*homologation*) procedures which allow job-specific educational qualifications to become more widely valid.[25] *Homologation* does not make possible such a strong form of identity as the equivalence[26] procedure controlled by the Ministry of Education, which involves a *personal representative* of the Ministry sitting on examining boards. *Homologation* takes place through negotiations by a less formal committee whose members include "personalities" as well as ministerial representatives. Its object is to achieve wider recognition for qualifications which are relatively limited in validity such as those awarded by private schools (though not by companies). Such qualifications are less anonymous than the most official educational qualifications since they are awarded on criteria which include a consideration of the holder's earlier properties (the level at which he was recruited and his work experience) as well as the training period that is being assessed, and they do not automatically provide the same rights (such as access to other jobs or additional training).

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[25] On qualifications losing value between 1973 and 1979, see Affichard (1981). On the development of the classification of qualifications and for an analysis of homologation procedures see Affichard (1983).

[26] The *equivalence* is obtained through an administrative procedure which allows (often foreign) qualifications to be recognized for the purposes of exemption and admission.

27. Three kinds of statuts may be distinguished: "*statuts octroyés*" (conditions which are granted) which have their source in a "policy pursued by the employer who, as far as industrial relations are concerned, looks neither for agreement with the trade unions nor, indeed, for any form of dialogue with them", the "*statuts concertés*" (consultative conditions) where the constraints of collective bargaining agreements do not apply but where, as the CNPF (French employers' organization) puts it, "the employers take care to consult and to ask questions in orders to broaden the basis of decision-making"; "*statuts contractés*" (negotiated conditions) which involve "explicit recognition, on the part of the employer, that the trade union side has a right to be consulted and to negotiate relations at work" and where "negotiations conclude with signed agreements" (Jobert and Rozenblatt, 1983, pp. 9-10).

In a more general way, forms which, because of their lifespan and their area of validity, are between State forms and more specific company forms, are constituted within the framework of collective agreements. The negotiating machinery and the bodies involved, as well as the rules which are established, may in fact only be valid within the company (through the *comite d'entreprise* (joint works council), representatives of management and workers in the company, "company conditions": company rules, job classifications, wages, work conditions, representation, etc.), the original model for which was the 1955 Renault agreement. They may also be valid only in relation to an occupational sector in one region, as with the many regional agreements which resulted from the strikes of 1936; or their validity may apply to a whole industry (and may include both employer organizations and trade unions and collective agreements covering whole industries; with national classifications, redundancy payments, pensions, and so on) (Jobert and Rozenblatt, 1981). As has been noted above, when the validity of these forms is extended their lifespan is usually extended as well. An agreement which applies only to one company is weaker than a collective agreement applying to a whole industry which amounts to a permanent "charter", whilst some fundamental rules (such as redundancy payments, pensions, and so on) are always laid down in industry-wide agreements (Jobert and Rozenblatt, 1981, p. 6). But as has also been said, the lifespan of forms also depends on the cost of their establishment, and this is high because they are not simply decreed unilaterally, but are negotiated *in all due form* with union representatives who therefore take partial responsibility for them.[27] But though establishment costs are high, maintenance costs are low by comparison with those needed for specific investments unilaterally undertaken by management which lead to much contention and many disputes and legal proceedings. Such disputes are particularly costly in France where, unlike the United States there iS no grievance procedure which makes possible conciliation withm the company (Bonafe-Schmitt, 1982),so that the causes of the dispute are broadened and *personal grievances* are transformed into *collective demands*.[28] The level of formal equipment of

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[27] Three kinds of statuts may be distinguished: "*statuts octroyés*" (conditions which are granted) which have their source in a "policy pursued by the employer who, as far as industrial relations are concerned, looks neither for agreement with the trade unions nor, indeed, for any form of dialogue with them", the "*statuts concertés*" (consultative conditions) where the constraints of collective bargaining agreements do not apply but where, as the CNPF (French employers' organization) puts it, "the employers take care to consult and to ask questions in orders to broaden the basis of decision-making"; "*statuts contractés*" (negotiated conditions) which involve "explicit recognition, on the part of the employer, that the trade union side has a right to be consulted and to negotiate relations at work" and where "negotiations conclude with signed agreements" (Jobert and Rozenblatt, 1983, pp. 9-10).

[28] The new labour legislation (the lois Auroux) contains provisions for compulsory negotiation as well as guaranteeing the employees the right to express their viewpoints or their grievances and will therefore reinforce the tendency for the company to be the basic

this kind will very much depend on how broadly based trade union representation is. It is more difficult to mobilize large numbers of people effectively throughout an industry, but if mobilization is limited to a single company (and unless it is, it cannot succeed), this can act as an obstacle to unification and to action being extended over a wider area which is necessary if the collective personae (in the form of union representatives) are to achieve influence and national stature. What determines which level of activity is chosen is often the length of time that trade union delegates have held their position, with those who have served longest being more expert in regional and national negotiations (Jobert and Rosenblatt 1983, pp. 195-l96).

In West Germany, all collective negotiation machinery is based on State forms, in such a way that State intervention, in the strict sense of the word, is much less great than in France. The framework of negotiation is strictly defined, as is the date and the lifespan (four or five years) of the contractual agreement (there are no strikes over contractual clauses). The way in which such agreements articulate with more specific forms of agreement is also laid down. Company agreements only relate to matters which do not figure in the collective agreement and, conversely, the terms of the collective agreement must refer back to an agreement within the works council (Jobert, Rozenblatt and Tallard, 1980, pp.113-115).

Invested forms have such different characteristics, both as regards the costs involved in establishing them and the effects they may have, that it seems necessary to look critically at all models which formally relate equipment which varies in this way. Although according to the "human capital" theory (Becker, 1980) it seems interesting to extend the notion of investment when that notion covers operations of commitment over time that are not taken into account within the classical framework, merely treating these operations as equivalent, by means of econometric formalizations, cannot be justified by referring to a market in which interests may meet. Indeed, the varied degrees of formalization, durability and validity of a State educational qualification, of training gained on the job, and of an individual physical property, prevent these things being related to a single monetary equivalent since it is too difficult and therefore too costly to do so effectively.[29]

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level at which disputes take place and are resolved. The same legislation requires rules and penalties to be given objectified, written form (articles L 122.40 and L 122.34 of the *Code du Travail*).

[29] A concept such as "firm-specific human capital" (Becker, 1980) attempts to grasp these differences. In a more general way, a whole set of theoretical research has, within the neoclassical framework, tried to get beyond the limits inherent in the perfect market model and to tackle questions which have a bearing on the ones discussed here. Such theories would include the "theory of the implicit contract" which is a mutual agreement between employer and employee in an environment of uncertainty, explaining "seniority based lay-off procedures"; "screening" theories or "signalling" theories which discuss the conception of the coding of hidden properties (of the

Given the significance of general forms and their usefulness in ensuring the regular and economic functioning of theoretical formulae as well as management principles and machines, it is tempting to look on their development as an indication of regular progress towards greater use of more standard and more rational tools and the disappearance of older more specific and less objectified forms. It is therefore important to conclude by emphasizing that this is not the case, and that such an evolutive picture would be extremely inadequate in the light of what can be seen taking place, especially at a time of recession.

lt is impossible to deny that standardization has gathered its own momentum by the consolidation of equipment that it produces. But it cannot avoid coming into conflict with the individual qualities of those who, at any given moment, phase out, invest in or maintain the forms in use, and who use such forms as a resource, thereby creating effects of differentiation. The process of differentiation has been studied in the life-style, practices and consumption habits which may be found in different social milieux and which condition the reproduction of those milieux (Bourdieu, 1979). An analysis of code forms makes possible an understanding of the link between the operations marking individual properties which make up identity, the criteria which form collective bodies, and the qualities which define products.[30] The effect of extending equivalents, on producers and users of more specific forms, has been discussed above with relation to educational qualifications (*titres*) and financial securities (*titres*). As far as the definition of products, implements and skills is concerned, investment in standard forms encourages greater circulation,[31] as is shown by the fact that their sale becomes possible (through licensing, franchising, engineering, etc.). Such investment then reduces the copying cycle, increases competition and ends up by stimulating the creation of specific forms in opposition to the standard forms, and this process can be seen in the textile and clothing industries, in steel (with special steels), in the motor industry (where the variety of ranges and models prevents norms being applied to all production lines), etc. It would appear that it is companies which make use of resources of this kind which have best weathered the recession, and in order to describe their economy, it would seem necessary to include in any analysis the fundamental characteristics of such resources as I have tried to define them in this paper.

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employee) in order to identify cases where imperfect information about the quality of the person has been supplied. For a discussion of these theories see Eymard-Duvernay and Thevenot (1983a, 1983b).

[30] For the modes of coding and decoding of characteristics which serve to shape social identity and to make it recognizable, see Boltanski and Thevenot (1983)

[31] "The more standardized the product and routinized the production process the easier lt Is for unsophisticated managers, engineers and workers to copy" (Sabel, 1982, ch. 5).

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REFERENCES

Affichard, J., 1981 "Quels emplois après l'école: la valeur des titres scolaires depuis 1972", *Economie et Statistique, 134*, 7-27.

Affichard, J.A., 1983 "Nomenclatures de formation et pratiques de classement", *Formation Emploi, 4*, 47-61.

Aglietta, M., 1976 *Régulation et crise du capitalisme*, Paris, Calmann-Levy.

Aglietta, M., Orlean, A., 1982, *La violence de la monnaie*, Paris, PUF.

Becker, G.S., 1973, "A theory of marriage, Part 1", *Journal of Political Economy, 81*, 4.

Becker, G.S., 1974, "A theory of marriage, Part 11", *Journal of Polifical Economy, 82,* 2.

Becker, G.S., 1980, *Human capital*, Chicago, University of Chicago Press, 2nd. edition (Ist. edition, 1964).

Benarroch, F., Espinasse, J.M., 1982, "Les salariés recrutés en 1980; caractéristiques et mode d'embauche", *Travail et Emploi, 11*, 71-81.

Benguigui, G., Montjardet, D., 1975 "Recherche sur la fonction d'encadrement", Paris, Université de Paris VII, Groupe de Sociologie du Travail.

Berger, P., Luckman, T., 1967, *The social construction of reality,* London, Allen Lane.

Bloch M., 1971, "Decision-making in councils among the Merina of Madagascar", pp. 29-61 in: Richards; Kuper (eds). Op. cit.

Boltanski, L., 1970, "Taxinomies populaires, taxinomies savantes; les objets de la consommation et leur classement", *Revue Française de Sociologie, 11*, 34-44.

Boltanski, L., 1982, *Les cadres; la formation d'un groupe social*, Paris, Minuit.

Boltanski, L., Thévenot, L., 1983, "Finding one's way in social space; a study based on games", *Social Science Information, 22*, 4/5, 631-679.

Bonafe-Schmitt, J-P., 1982 "La pratique de négociation collective dans l'entreprise", *Revue Francaise des Affaires Sociales, 36,* 167-181.

Bony D., Eymard-Duvernay, F., 1982, "Cohérence de la branche et diversité des entreprises; étude d'un cas", *Economie et Statistique, 144*, 13-23.

Bourdieu, P., 1978, "Classement, déclassement, reclassement", *Actes de la Recherche en Sciences Sociales, 24,* 13-23.

Bourdieu, P., 1979, *La distinction*, Paris, Minuit.

Bourdieu, P., 1980, *Le sens pratique*, Paris, Minuit.

Bourdieu, P., Chamboredon, J-C., Passeron, J-C., 1968, *Le métier de sociologue*, Paris/La Haye, Mouton.

Bourdieu, P., Boltanski, L., de Saint-Martin, M., 1974, "Les stratégies de reconversion; les classes sociales et le système d'enseignement", *Social Science Information, 12(5)*, 95-107.

Bourdieu, P., Boltanski, L., 1975, "Le titre et le poste; rapports entre le système de production et le système de reproduction", *Actes de la Recherche en Sciences Sociales, 2,* 95-107.

Boyer, R., 1979, "La crise actuelle: une remise en perspective historique", *Critique de l'Economie Politique, 7-8,* 5-113.

Broverman, H., 1974, *Labor and monopoly capital; the degradation of work in the 20th century*, New York, Monthly Review Press.

Callon, M., Latour, B., 1981, "Unscrewing the big Leviathan", in: Knorr-Cetina, Cicourel (eds). *Advances in social theory and methodology*. Boston, Rout!edge and Kegan Paul, pp. 277-303.

Cicourel, A., 1964, *Method and measurement in sociology,* London, The Free Press of Glencoe.

Commons, J., 1934, *Institutional economics*, New York, Macmillan.

Cornfield, D., 1982, "Seniority, human capital, and layoffs; a case study", *Industrial Relations, 21*(3), 352-364.

Crozier, M., 1963, Le phénomène bureaucratique, Paris, Seuil.

Desrosieres, A., 1977, "Eléments pour l'histoire des nomenclature socioprofessionnelles", in: *Pour une histoire de la statistique*, t.l. Paris, INSEE, pp. 155-231.

Desrosieres, A., Pialoux, M., 1983, "Rapport au travail et gestion de la main-d'oeuvre; problèmes de méthodes", *Critique de l'Economie Politique, 23-24,* 66-85.

Desrosieres, A., Goy, A., Thévenot, L., 1983 "L'identité sociale dans le travail statistique; la nouvelle nomenclature des professions et catégories socioprofessionnelles", *Economie et Statistique, 152*, 55-81.

Devouassoux, J.; Morel, B., 1983, "Le diagnostic; entre la pratique médicale et la collecte statistique", Actes du Colloque du Conseil National de la Statistique (18-19 April 1983), Paris, INSEE.

Dubois, P., Durand, C., 1983, "Les politiques patronales d'innovation", *Critique de l'Economie Politique, 23-24,* 144-161.

Dumett, M., 1975, "Wang's paradox", *Synthèse, 3/4*, 301-324.

Durand, C., 1978, *Le travail enchaîné*, Paris, Seuil.

Elias, N., 1973, *La civilisation des moeurs*, Paris, Calmann-Levy (1st. ed. in German, 1939).

Elster, J., 1979, *Ulysses and the sirens*, Cambridge/Paris, Cambridge University Press/Editions de la Maison des Sciences de l'Homme.

Eymard-Duvernay, F., 1981, "Qualification, poste, salaire; etude sur l'industrie horlogere", in: "Les categories socioprofessionnelles et leur reperage dans les enquetes", Archives et Documents 38. Paris, INSEE.

Eymard-Duvernay, F., Thevenot, L., 1982 "L'économiste et son modèle". Paris INSEE. (Mimeo.)

Eymard-Duvernay, F., Thevenot, L., 1983a, "Investissements spécifiques et concurrence sur un marché". Paris, INSEE. (Mimeo.)

Eymard-Duvernay, F., Thevenot, L, 1983b "Les investissements de forme: leurs usages pour la main d'oeuvre". Paris, INSEE. Mimeo.

Faguer, J-P, 1982 "Jeunes à l'essai; les pratiques d'embauche en période de crise chômage". Paris, *Cahiers* du Centre d'Etudes de l'Emploi, (Mimeo.)

Fox, A., 1971, *A sociology of work and industry*, London, Cassell and Collier Macmillan .

Carfinkel, H., 1967, *Studies in ethnomethodology*, Englewood Cliffs, N. J., Prentice-Hall.

Gelb, I., 1963, *A study of wrifing*, Chicago.

Goode, W., 1974, "Comment: the economics of nonmonetary variables", *Journal of Politlcal Economy, 82* (2), S27-S33.

Goody, J., 1977, *The domest!cation of the savage mind*, Cambridge, Mass., Cambridge University Press.

Gouldner, A., 1954, *Patterns of industrial bureaucracy*, New York, The Free Press.

Guibert, B.; Laganier, J.; Volle, M., 1971, "Essai sur les nomenclatures industrielles", *Economie et Statistique, 20,* 23-36.

Hicks, J., 1974, *The crisis in Keynesian economics*, Oxford, Basil Blackwell.

Holmsthom, H., 1981, "Contractual models of the labor market", *American Economic Review, 71*(2), 303-313.

Jobert, A., Rozenblatt, P., Tallard, M., 1980, "Facteurs determinants du contenu des conventions collectives et de leur evolution; le cas du secteur de la chimie et de la pharmacie en France et en RFA (rapport exploratoire)", Paris, CREDOC. (Mimeo .)

Jobert, A.; Rozenblatt, P., 1981, "L'application des conventions collective dans la chimie et la pharmacie (rapport exploratoire)". Paris, CREDOC. (Mimeo.)

Jobert, A., Rozenblatt, P, Tallard, M., 1983 "L'application des conventions collectives dans les branches de la chimie et de la pharmacie", Paris, CREDOC. (Mimeo.)

Johnson-Laird, P., Wason, P. (eds), 1977, *Thinking; reading in cognitive science*, Cambridge, Mass., Cambridge University Press.

Jones, G., 1971, "Councils among the Central Ido", pp. 63-79 in: Richards, Kuper, (eds). Op. cit.

Kuper, A., 1971, "Council structure and decision-making", pp. 13-28 in: Richards, Kuper, (eds), Op. cit.

Latour, B.; Woolgar, S., 1979, *Laboratory life, and social construction of scientificfacts*, Beverly Hills, Calif., Sage.

Leibniz, G.W., Stark, D., 1875-1890, Die philosophische schriften (ed. C.J. Gerhardt), 6 vols, Berlin, Weidmannsche Buchhandlung.

Mehaut, P., Rose, J., Stiglitz, J., 1982, "Systeme productif, gestion de la main d'oeuvre et usage des mesures étatiques de formation et d'insertion", paper presented at the colloquium on "Les politiques de l'emploi", Nancy, Febr., GREE.

Orlean, A., 1982, "Inflation et souverainete monetaire", *Critiques de l'Economie Politique, 18,* 93-113.

Pinsky, L., 1980, "Analyse ergonomique du travail mental de saisie-chiffrement sur terminal d'ordinateur", *Le Travail Humain, 43* (1), 183-184.

Pipino, L., Gigch, J. van, Tom, G., 1981n "Experiments in the representation and manipulation of labels of fuzzy sets", *Behavioral Science, 26,* 216-228.

Richards A., 1971, "The nature of the problem", pp. 1-12 in: Richards; Kuper (eds). Op. cit.

Richards, A., Kuper, A. (eds), 1971, *Councils in action*, Cambridge, Mass., Cambridge University Press.

Rivard, P., 1983, "Le dilemne utilite/elucidation et ses conséquences sur une enquête statistique privée", Actes du Colloque du Conseil National de la Statistique (18-19 April 1983), Paris, INSEE

Robertson, A., 1971 "The development of town committees in Ahafo, Western Ghana", in: Richards; Kuper (eds). Op. cit., pp. 130-170.

Rosch, E., 1977, "Classification of real-world objects; origins and representation in cognition", in: Johnson-Laird; Wason (eds). Op. cit., pp. 212-222.

Sabel C., 1982, *Work and politics*, Cambridge, Mass., Cambridge University Press.

Spence, M., 1973, "Job market signaling", *Quarterly Journal of Economics, 87*, 355-374.

Stark, D., 1980, "Class struggle and the transformation of the labor process; a relational approach", *Theory and Society, 9* (1), 89-128.

Stiglitz, J., 1975, "The theory of 'screening', education and the distribution of income", *American Economic Review, 65*, 283-300.

Taylor, F.W., 1967, *The principles of scientific management*, New York, Norton and Company, First published in 1911 by Frederick W. Taylor.

Thévenot, L., 1979, "Une jeunesse difficile; les fonctions sociales du flou et la rigueur dans les classements", *Actes de la Recherche en Sciences Sociales 2627*, 2-18.

Thévenot, L., 1983a, "L'enregistrement statistique: une mesure decisive", Actes du Colloque du Conseil National de la Statistique (18-19 April 1983), Paris, INSEE.

Thévenot, L., 1983b, "L'economie du codage social", Critiques de l'Economie Politique 23-24: 188-222.

Thomson, E., 1967, "Time, work-discipline and industrial capitalism", *Past and Present, 38*, 56-97.

Volle, M., 1982, *Histoire de la statistique industrielle*, Paris, Economica.

Weber, M., 1964 *From Max Weber, essays in sociology*, Oxford, Oxford University Press (1st German ed. 1922).

Weiss, S., 1976, "The sorites fallacy; what difference does a peanut make?", *Synthese 2-3-4*, 253-272.

Zerubavel, E., 1982, "The standardization of time; a sociohistorical prespective", *American Journal of Sociology, 88,* 1-23.