



ABRIR VOLUMEN I

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TEXTUALIDAD Y COMPRENSION DE TEXTOS:
ARTICULOS CIENTIFICOS DE ECONOMIA Y FILOLOGIA

APENDICE

TESIS DOCTORAL

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SOME OBSERVATIONS ON MULTIVARIATE TECHNIQUES
IN LANDSCAPE EVALUATION

SOME OBSERVATION ON MULTIVARIATE TECHNIQUES
IN LANDSCAPE EVALUATION

INTRODUCTION

<1>

1. The last decade has witnessed an unprecedented rise in the number of techniques designed to assess the relative visual quality of the landscape (see PENNING-ROWSELL, 1973, 1975, and DEARDEN, 1977a for bibliographical reviews).
EXPERIMENTADOR COMO CIRC-TIEMPO

2. This proliferation has been prompted by two main forces (DEARDEN, 1978).

RESULTADO

3. First, planning agencies on both sides of the Atlantic have become more aware of the importance of the visual resources of a region in the quest for higher environmental quality and citizen satisfaction.

TEX

EXPERIMENTADOR-COGNITIVO

4. This has been reinforced by recent legislation and the more serious attention being accorded aesthetics in the courts (ANDERSON, 1968; BROUGHTON, 1972; LEIGHTY, 1972 and CERNY, 1974).
OBJETIVO

5. Consequently, increased research funds have been made available to researchers in this area, and also, and probably not totally unconnected, increased numbers of researchers have become interested in the aesthetics of landscape.

TEX

OBJETIVO

<2>

1. Second, judgements of visual quality are, and always will be, purely subjective opinions.

TEX

PORTADOR-ADSCRIPTIVO

2. Considerable doubt (e.g. TURNER, 1975) has been expressed as to whether such opinions can ever be incorporated into a generally accepted technique for the assessment of visual quality.

EMITIDO

3. Consequently, at the moment, there is an absence of valid and reliable theory in the area.

TEX

CIRC - TIEMPO

4. This, coupled with the difficulties involved in the study of such an inherently subjective topic renders the field of landscape aesthetics open to a wide range of methodological interpretation, which, in turn, has spawned the numerous techniques currently in use.

CAUSANTE-ADSCRIPTIVO

<3>

1. DANIEL (1976) has suggested that proposed techniques meet three criteria: that they be valid, reliable and practical.

EMISOR

2. Many of the techniques suggested to date fail to do this, especially the first two (DEARDEN, 1977b).

AGENTE COMO PORTADOR-ADSCRIPTIVO

3. However, more recently a number of statistical techniques have been developed (e.g. COVENTRY-SOLIHULL-WARWICKSHIRE, 1971; ROBINSON et al., 1976; DEARDEN, 1979) that appear to be more capable of fulfilling the criteria.

TEX

CIRC-TIEMPO

<4>

1. All these techniques are similar in that they use multiple regression as a means of ascertaining the relative visual quality of a region.

PORTADOR-ADSCRIPTIVO

2. The techniques differ, however, in the derivations of the inputs to the regression model.

PORTADOR-ADSCRIPTIVO

3. In particular, the important work of Robinson et al. suggests that the variables constituting the independent side of the model be factor analysed.

TEX

EMISOR

4. CLWYD COUNTY COUNCIL (1975) produced a map of visual quality using this method, and SHAFER, HAMILTON and SCHMIDT (1969) also used factor-analysed independent variables in a somewhat similar endeavour.

AGENTE-CREATIVO

5. This paper proceeds through a brief description of a statistical technique (DEARDEN, 1979) to an evaluation of whether factor analysis is a desirable step in the prediction of the visual quality of landscape by statistical methods.

O.T. EMISOR

<5>

1. This question becomes important if it is found that, in a study of the same area using the same data and statistical techniques, the visual quality map produced varies significantly according to whether the independent variables are factor analysed or not before input to the regression.

PORTADOR-ADSCRIPTIVO

2. If the maps are found to differ significantly, the question arises as to which is the more valid representation of visual quality.

CIRC-CONDICION

<6>

1. Obviously, the resolution of this question has both theoretical and practical implications.
INTERPERS POSEEDOR

2. First, the objective of producing a visual-quality map is so that it can be incorporated along with other resource information into land-use policy decision-making.
TEX IDENTIFICADO

3. The quality of land-use planning decisions are influenced by the integrity of the information upon which they are based.
AFECTADO

4. If variations in the assessment of relative visual quality are more the product of the method by which it was evaluated than actual differences in landscape then this lowers the integrity of the input, with a consequent lowering in the quality of decision-making.
CIRC-CONDICION

<7>

1. Second, it is with considerable difficulty that decision-makers have finally been persuaded of the importance of the landscape aesthetics in making land-use decisions.
TEX CIRC-MANERA

2. Much hard-earned credibility could be lost by the production of differing visual-quality surfaces of the same area.
OBJETIVO COMO EXISTENTE

3. Finally, if the technique is to be promoted for use by planning agencies then as precise and unambiguous a statement of methodology as possible is required.
TEX CIRC-CONDICION

THE STATISTICAL PREDICTION OF THE VISUAL QUALITY OF THE LANDSCAPE

<8>

1. The procedures followed to obtain input for the various models follow a similar pattern.
AGENTE COMO PORTADOR-ADSCRIPTIVO

2. Field assessment by a selected team of observers is used to derive rigorous mean visual-quality scores for a representative sample of the total numbers of grid squares within the area under consideration; these are the dependent variables.
OBJETIVO COMO MEDIO

3. The independent side of the model is comprised of measurements per grid square for each of a number of landscape elements (usually between 20 and 30), whose presence is hypothesized to be related to visual quality (see Table 1 for those used by DEARDEN, 1979).

PORTADOR-ADSCRIPTIVO

4. With a knowledge of the strength of each element within each unit, it is possible, using the sample mean quality scores as the dependent variables in a multiple regression, to establish a weight (i.e. a regression coefficient) for each element that reflects its contribution to visual quality in the units sampled.

CIRC-MEDIO

5. Thus:

$$Q_j = A + \sum_{k=1}^n B_k X_{jk} + e,$$

where Q_j = mean visual-quality score of each unit sampled;

A = regression constant;

B_k = unstandardized regression coefficient for variable k;

X_{jk} = incidence of variable k in unit j;

e = error term.

TEX

IDENTIFICADO

<9>
1. The visual-quality scores that would have been accorded each of the unsampled units, had they been surveyed on the same basis as the sample units, can then be calculated again using the equation given above through a knowledge of the strength of occurrence of each element within each unit plus knowledge of the use of the standardized regression coefficients.

OBJETIVO

2. The range of scores obtained can then be broken down into classes and the results mapped.

OBJETIVO

<10>
1. The validity of this type of approach is, of course, largely dependent upon the quality of the inputs of the regression.

PORTADOR-ADSCRIPTIVO

2. The R² value of the regression, although ostensibly an indication of validity, merely shows the proportion of variance in the dependent variables accounted for by the independent variables in the particular sample used.

CAUSANTE-COGNITIVO

3. Whether the dependent variables, no matter how rigorously derived, constitute a valid representation of visual quality is difficult to establish due to thorny philosophical and theoretical problems of defining a quality metric.

PORTADOR-ADSCRIPTIVO

4. However for the purpose of this study, it will be assumed that the dependent variables do constitute a valid representation of visual landscape quality, for it is variations in the independent side of the model which are our main concern at the moment.

TEX

CIRC-FINALIDAD

THE VISUAL-QUALITY MAPS

<11>

1. Using the regression models described above, two maps of the visual landscape quality of the Saanich Peninsula, British Columbia, were produced, one using individual landscape elements and the other factor-analysed landscape elements as the independent variables in the regression equation.

CIRC-MEDIO

2. In each case, a step-wise procedure was used such that the variable accounting for the largest amount of variance unexplained by the precedent variables is entered at each stage.

CIRC-LOCALIZACION

3. Thus, the variables in Table 2, the results of the regressions using the individual landscape elements, are presented in the order in which they entered the equation.

TEX

PORTADOR-CIRC-MANERA

<12>

1. With all 30 variables in the equation, the R² value of 0.92 indicates that 92% of the variance in the dependent variables is accounted for.

CIRC-TIEMPO

2. This figure is, however, an exaggeration of reality produced by the zero-order correlations erroneously being treated as if they were error-free, resulting in some capitalization of chance.

PORTADOR-ADSCRIPTIVO

3. The R² adjusted measure provides a more realistic interpretation of the actual predictive value (see KERLINGER and PEDHAZUR, 1973, p. 282, for example).

IDENTIFICADO

<13>

1. In addition, it is necessary to decide whether all 30 variables should be used for predictive purposes or whether there is some cut-off point after which the addition of further variables merely capitalizes on random factors.

TEX

EVALUATIVO

2. Reference to Table 2 illustrates that, after a certain point (the addition of the variable "Hedge"), the R²-adjusted values start to fall.

EMISOR

3. The addition of the remaining variables therefore, only reduces the amount of adjusted variance explained.

AGENTE

4. It was , therefore , decided that the maximum number of variables should be included up to the point of decreasing R²-adjusted values to obtain the regression coefficients using the equation presented earlier .

TEX PROCESO COGNITIVO

5. A graph showing observed against predicted visual quality scores for each of the 43 sample units is presented in Fig. 1.

PORTADOR-CIRC-LUGAR(TEX)

<14>

1. The visual-quality scores for the unsampled units were calculated by multiplying the incidence of each variable in each unit by the unstandardized coefficient for each respective variable.

OBJETIVO

2. These were totalled for all variables in each unit and added to the regression constant for the equation at this stage to produce the final estimate of visual quality for each unit.

OBJETIVO

3. The range of values obtained was divided into five classes and the results mapped to produce the visual-quality surface of the area(Fig 2).

OBJETIVO

<15>

1. A second map of the visual quality of the area was produced using factor-analysed independent variables following the suggestion of ROBINSON et al. (1976).

OBJETIVO-CREATIVO

2. Previous to the analysis, all variables measured on a presence/absence basis (see table 1) were removed from the data to minimize the chance of random correlations.

CIRC-TIEMPO

3. Using a varimax rotation, eight factors were identified with eigenvalues over one (Table 3).

CIRC-MEDIO

4. The factor scores plus the four variables removed previous to the analysis were used as independent variables ~~in the~~ regression equation to obtain the regression coefficients.

OBJETIVO COMO ROL

5. The multiple regression was undertaken using the same step-wise procedure as before and the results are presented in Table 4.

OBJETIVO

6. The criteria for deciding the most appropriate cut-off point were those adopted previously, i.e. at the point of the maximum R2-adjusted value.

IDENTIFICADO

7. A graph illustrating the relationship between observed and predicted visual-quality scores for each of the sample units is presented in Fig. 3.

PORTADOR-CIRC-LUGAR(TEX)

<16>

1. The unstandardized coefficients plus the regression constant were used to predict visual-quality scores for all the unsampled units.

OBJETIVO COMO MEDIO

2. The range of values was split into five quality classes with the same numbers of units in each class as in the previous map (Fig. 2) and the results mapped (Fig.4)

OBJETIVO

<17>

1. Although the predicted scores may vary slightly between the two regressions, essentially the units should have the same relative rankings of visual quality.

CIRC-CONCESION

2. With the same number of units in each quality class, the maps should be very similar to each other.

CIRC-CAUSA

3. If there are substantial differences, then questions arises as to which presents the more valid depiction of visual-landscape quality.

CIRC-CONDICION

<18>

1. To aid assessment of the variation between the two maps, a third map was produced (Fig.5) summarizing the difference between the two visual quality surfaces.

CIRC-FINALIDAD

2. This map compares each of the visual-quality maps, unit by unit, and indicates any existing class differences.

AGENTE

3. Of the 258 units, 95 (37%) exhibit changes in their classifications, of which 18 (7%) are of two classes or more.

POSEEDOR

THE REGRESSION RESULTS COMPARED

<19>

1. Before proceeding with a more detailed examination of the advantages and disadvantages of either approach, it may well be useful to compare the results of the two regression analyses.
O.T. CIRC-TIEMPO(TEX)

2. Table 5 presents some relevant statistics for each regression.
EMISOR

3. It will be noticed that the R² and R²-adjusted values for the regression using the landscape elements are considerably higher than those using the factor scores.
INTERPERS PORTADOR-ADSRRIPTIVO

4. The R² value indicates the amount of variance in the dependent variables accounted for by the independent variables.
CAUSANTE-COGNITIVO

5. The higher the value, then, the greater the amount of variance accounted for.
CIRC-COMPARACION

6. The aim of a regression is to determine a unique set of regression coefficients that account for the maximum amount of variance in the dependent variable.
IDENTIFICADO

7. The regression using landscape elements appears to be more successful in this task.
PORTADOR-ADSRRIPTIVO

<20>

1. This is illustrated in Figs. 3 and 5 with the points of the graph using the landscape elements (Fig 3) showing much less deviation from a straight line than those produced by factor scores (Fig. 5).
EMITIDO

2. In fact, the mean residual for the latter is more than double that for the former (7.0 compared to 3.37).
TEX PORTADOR-ADSRRIPTIVO

3. In addition, the standard error of the estimate for the equation using factor scores (9.3) is greater than when using landscape elements (7.23).
TEX PORTADOR-ADSRRIPTIVO

FACTOR SCORES AS INDEPENDENT VARIABLES: THE CASE FOR AND AGAINST

<21>

2. The surfaces of visual quality produced by the two procedures undoubtedly exhibit the same general trends (Figs. 2 and 4).
POSEEDOR

2. Concentrations of high-quality units occur on the coast line and in some of the areas inland (e.g. 7370), and also low-quality units show some distributional similarities (e.g. 6888, 7169).

EXISTENTE

3. However, as previously indicated, differences between the maps occur in 37 % of the units (Fig. 5).

TEX

TEX

EXISTENTE

4. Furthermore, in this example, it appears that the individual landscape elements rather than the factor scores account for a greater proportion of the variance in the visual-quality scores, and therefore, constitute a better basis for prediction.

TEX

CIRC-LOCALIZACION

5. Consequently, it seems appropriate to examine the reasoning of ROBINSON et al. (1976) which leads them to favour the use of factor-analysed independent variables in the regression.

TEX

EVALUATIVO

<22>

1. One of the principal reasons advanced is that by using raw variables as the independent data, no allowance is made for the association between variables.

IDENTIFICADO

2. Variations in visual quality are the product of many factors, including not only the presence of certain components but also the association between components.

PORTADOR-ADSCRIPTIVO

3. ROBINSON et al. (1976, p. 124) expand:

EMISOR

4. "The presence of several components in a landscape may result in a overall quality effect which differs from that which can be represented by the sum of the scores of the components, because one component may become more or less variable in the presence of others."

CAUSANTE-EXISTENCIA

<23>

1. This is a good point, and a recognized deficiency of using a multiple regression technique.

PORTADOR-ADSCRIPTIVO

2. However, factor analysis does not seem to provide a solution to the problem by clustering highly correlated variables into factors.

TEX

AGENTE

3. This clustering of variables is done to maximize the variance of the cluster -not to maximize the predictive ability of the variables.

OBJETIVO

4. There appears, therefore, to be no more a logical connection existing between landscape and the factors than between quality and the measurement of the landscape elements.

INTERPERS

TEX

EXISTENTE

5. The selection of variables for prediction by factor analysis invariably involves loss of useful information.

POSEEDOR

6. A landscape element highly correlated with visual quality might not be significantly represented in any of the factors.

PORTADOR-ADSCRIPTIVO

7. On the other hand, use of the individual landscape elements guarantees that the best possible prediction equation will be derived.

TEX

AGENTE

<24>

1. It is /also /argued / that, because of the number of regression weights involved, "the interpretation of the results become much more difficult" (ROBINSON et al., 1976, p.167).

TEX

INTERPERS

CIRC-CAUSA

2. Anyone familiar with factor analysis and the difficulties involved in accurately defining the nature of each factor (if such a process is possible) would doubt that using factors instead of tangible landscape elements could appreciably simplify the procedure.

EXPERIMENTADOR-COGNITIVO

<25>

1. Furthermore, ROBINSON et al. (1976) contend that using landscape elements as the independent variables is akin to black-box techniques giving the the analyst little indication of what processes are really taking place.

TEX

EMISOR

2. Again, it is maintained that, although this might be valid criticism, factor analysis merely compounds the situation.

TEX

INTERPERS

CIRC-CONCESIVA

<26>

1. Given the aims of this type of study, i.e. to map variations in visual quality for planning purposes, it is almost certain that because of the present state of the art all studies will use black-box techniques to a certain degree.

CIRC-CAUSA

2. This is because, at present, there is insufficient knowledge of the processes of landscape perception and preferences.

PORTADOR-CIRC-CAUSA

<27>

1. It would be preferable to have some theoretical and empirically proven knowledge in these areas.

EVALUATIVO

2. Unfortunately, such is not the case.

INTERPERS IDENTIFICADO

3. There is, however, an immediate need to incorporate assessments of visual quality in landscape planing.

TEX EXISTENTE

4. Insufficient time exists to undertake the type of psychological studies required to truly understand the natural of landscape preferences.

EXISTENTE

5. Therefore, it is necessary, at the moment to forego such knowledge and aim for the most reliable and valid results that can possibly be achieved, irrespective of the lack of knowledge on process.

TEX EVALUATIVO

6. All studies that aim thus are, in a manner of speaking, black-box techniques.

PORTADOR-ADSCRIPTIVO

7. The use of factor scores in the multiple-regression does nothing to change the situation.

AGENTE

8. The use of individual landscape elements, retaining only those up to the point of decreasing R²-adjusted values for predictive purposes, will ensure that every variable that contributes to the prediction would be included and, hence, minimize within the constraints mentioned above, the black-box nature of the technique.

CAUSANTE-MATERIAL

<28>

1. It is also contended by ROBINSON et al. (1976) that, by using landscape elements, the number of regression weights is increased and, consequently, the chance of spurious relationships between quality and variable increase.

EMISOR

2. They illustrate this problem with an example that might be of benefit to repeat:

EMISOR

3. "Suppose, for example, that in some hypothetical area, mineral extraction is closely associated with deciduous woodland, and woodland might even screen the quarries from the observer, then it is highly likely that, within certain limits, the recorded quality score for any of the survey units concerned will increase as the amount of deciduous woodland cover rises.

INTERPERS TEX CIRC-LUGAR

4. However, the estimated regression weights will also indicate that quality increases as the area of mineral extraction increases.

TEX CAUSANTE-COGNITIVO

5. This is unlikely.

PORTADOR-ADSCRIPTIVO

6. The explanation probably lies in the intervention of woodland, a variable to which both quality and mineral extraction are related, rather than in a direct positive association.

PORTADOR-CIRC-LUGAR

7. The trouble with such spurious correlations is that if they exist in the sample data, they will affect that predictions in the areas for which estimates are required.

IDENTIFICADO

8. Thus, in the circumstances quoted above, a survey unit that contained mineral extraction but not deciduous woodland could, erroneously, obtain a high estimated score" (ROBINSON et al., 1976, p. 167).

TEX CIRC-LOCALIZACION

<29>

1. The most appropriate way to tackle this problem is to ensure that sufficient variations in the quantity of each variable occur in the set of sample survey units, and to select appropriate criteria for rejecting non-contributory landscape elements, such as no increase in the adjusted-R² value.

IDENTIFICADO

2. Under these conditions, the error due to the type of problem mentioned above will be negligible.

CIRC-CONDICION

<30>

1. The final point advanced by ROBINSON et al. (1976) in favour of factor analysis is also difficult to support.

PORTADOR-ADSCRIPTIVO

2. It is claimed /initially / that the analyst, by using the landscape elements individually, is expecting to explain a higher proportion of the variance than by using factor-analysed independent variables.

INTERPERS TEX EXPERIMENTADOR-COGNITIVO

3. Although the gist of this is not easy to follow, it does appear obvious, as in all experimental work, that the analyst will use what he considers to be the most fruitful means of proceeding.

CIRC-CONCESION

4. However, it is /further / postulated / that: (a) to include the variables individually assumes the observer, in making this judgement, disaggregates the landscape and assesses each input individually; but (b) if a "structure" is shown to exist between the variables, this position is not tenable; and, therefore, (c) the observer will evaluate the whole and expect to find certain components existing along with others.

TEX

TEX

INTERPERS

EXPERIMENTADOR-
COGNITIVO COMO
CIRC-CONDICION

5. "There is a strong possibility, therefore, that a regression analysis based upon the the factor structure will explain a higher proportion of total variation than one which is not" (ROBINSON et al., p. 166).

INTERPERS

TEX

AGENTE

<31>

1. The logic underlying this argument is not at all clear.
PORTADOR-ADSCRIPTIVO

2. There appears to be no basis for claiming that the inclusion of individual landscape elements as independent variables implicitly assumes that an observer disaggregates the landscape into the same individual and discrete elements to make his evaluation.

EXISTENTE COMO EVALUATIVO

3. The analyst is merely seeking to predict the scores that would have been obtained by all units had they been surveyed in a manner similar to the sample units.

AGENTE

4. This makes no assumptions regarding the perceptual mechanisms of individuals; therefore, the above statement appears irrelevant.

EXPERIMENTADOR-COGNITIVO
COMO CIRC-TIEMPO

5. Accordingly, statement (b) becomes meaningless, while no supportive material is provided to substantiate the claims of statement (c), nor of the conclusion.

TEX

PORTADOR-ADSCRIPTIVO

6. The results of the present study (Table 5) demonstrate that the regression analysis based upon individual landscape elements is successful in explaining a greater proportion of the variance than one based on factor scores.

EMISOR

CONCLUSION

<32>

1. The search for a valid, reliable and practical means of assessing the visual quality of landscape is a difficult field of endeavour that will only advance through rigorous evaluations of suggested techniques.

PORTADOR-ADSCRIPTIVO

2. PENNING-ROUSELL and HARDY (1973), GILG (1974,1975a,1975b), and BLACKSELL and GILG (1975) have all undertaken further examination of suggested techniques and made significant comments as to their possible improvements.

AGENTE

3. This paper reports on an experiment designed to test the desirability of factor analysing landscape elements before their use as independent variables in statistical methods of visual-quality evaluation as suggested by ROBINSON et al. (1976).

O.T. EMISOR

4. An incisive paper by PENNING-ROUSELL and SEARLE (1977) considers other aspects of Robinson's techniques.

EMISOR

<33>

1. After examining in detail the arguments advanced for using factor scores, it is proposed that ~~such a procedure has little~~ theoretical or practical justification.

CIRC-TIEMPO(TEX)

2. The principal criticisms raised by ROBINSON et al. (1976) of using individual landscape elements are largely valid.

PORTADOR-ADSCRIPTIVO

3. It is maintained, however, that the advantages of factor analysing to overcome these problems are insufficient to outweigh the weakening of the predictive power of the analysis.

INTERPERS

TEX

PORTADOR-ADSCRIPTIVO

4. Many of the criticisms apply to statistical techniques irrespective of the nature of the independent variables.

PORTADOR-CIRC-DESTINATARIO

5. Therefore, if the aim of the technique is to reproduce the visual-quality scores given by the observation team to each sample unit as precisely as possible to enable the prediction of visual quality for unsampled units, then it must be concluded that the use of individual landscape elements in a regression analysis is more successful in this task.

TEX

CIRC-CONDICION

THE POLITICAL ECONOMY OF MILITARY SPENDING:
EVIDENCE FROM THE UNITED STATES

THE POLITICAL ECONOMY OF MILITARY SPENDING:
EVIDENCE FROM THE UNITED STATES

<1>

1. Social scientists, especially in the United States, have employed a variety of disparate geopolitical and bureaucratic or organisational explanations of defence spending in advanced industrial nations (see the succinct review of the literature by Ostrom, 1978).

AGENTE

2. In an attempt to circumvent some of the perceived weaknesses of the dominant and largely mono-causal explanations, Ostrom proposed a 'synthetic' model, labelled 'reactive linkage', which integrates aspects of the conventional 'arms race' and 'budgetary politics' theories.

CIRC-FINALIDAD

3. Briefly, the defence budgetary process in the US is thought by Ostrom to be initiated by actual or perceived 'defence needs', which determine the armed services request for defence appropriations.

TEX

FENOMENO

4. That request is altered as it is 'filtered through the remaining organisations (i.e., President, Congress, Department of Defense) to determine the magnitude, scale, and timing of the reaction' (Ostrom, 1978, p. 943).

OBJETIVO

<2>

1. Ostrom's model, which focuses analytic attention on the international and some aspects of the domestic contexts within which military expenditure decisions are developed and executed, appears to have both explanatory and predictive power.

POSEEDOR

2. Peculiar to Ostrom's model (and several other traditional approaches), however, is the exceedingly narrow definition of 'domestic context'; at least operationally, that concept is used to refer exclusively to the organisational linkages and implicit power differentials among the state bureaucracies discussed above.

ADSCRIPCION

3. Nowhere in any of this literature are internal economic conditions considered to be salient domestic influences impinging on the military budgetary process.

CIRC-LUGAR

4. The structural instability of the capitalist economy, especially though not exclusively its tendency to underconsumption, has of course been identified by a number of Marxists as the prime determinant of the 'permanent arms economy' in the US (Baran and Sweezy, 1966; O'Connor, 1973; Kidron, 1968).

OBJETIVO

5. To the extent that the Marxist perspective is correct, then those theories of military expenditure which ignore the possible effect of capitalist stagnation are likely to be incomplete or simply wrong.

CIRC-CONDICION

<3>

1. The viability of the Marxian thesis was first examined in this journal by Smith (1977) and further scrutinised by Chester (1978), Hartley and McLean (1978) and , once again by Smith (1978).

OBJETIVO

2. In this paper we wish to present yet another series of observations and analyses on the relationships among international tensions and geopolitical considerations, capitalist prosperity , and military expenditure for British readers possibly unfamiliar with research currently under way in the United States (see Griffin,, Devine, and Wallace, in press).
O.T. CIRC-LUGAR(TEX)

3. We found the debate between Smith and his critics informative, and Smith's two contributions particularly instructive for our research, but we argue that in at least one important particular both Smith (1977, 1978) and Chester (1978) are incorrect, and, indeed, that the entire debate was misdirected for the same reason.

EXPERIMENTANTE-COGNITIVO

4. Smith argued that the stagnation thesis predicts that defence spending should be stimulated by a nation's need for surplus absorption and, more generally, by economic downturns.

EMISOR

5. Neither he nor his critics found such a relationship with cross-section data, though Smith in his reply (1978), did find a positive, marginally significant, relationship between unemployment (lagged two years) and military expenditure (as a percentage of potential GDP) in the United Kingdom for the period 1948-1975.

AGENTE

6. He discounted the statistical significance of that finding , however, and concluded that Baran and Sweezy's underconsumptionist hypothesis received no support.

EMISOR

<4>

1. Our basic disagreement with Smith (and his critics) is that his initial formulation of the problem included a static cross-sectional design to test an essentially dynamic and historical argument, and his modified design employed data from what is perhaps the wrong nation (i.e., the UK).

IDENTIFICADO

2. Baran and Sweezy's thesis is grounded in the particular political-economic history of the United States and the theory may be subject to similar 'laws' of capital accumulation, but industrial structures, degrees and forms of working-class organization, world economic position, and forms of state economic intervention differ significantly among them.

OBJETIVO

3. This heterogeneity within the capitalist 'core' has important implications for determining crisis management strategies in general and modes of surplus absorption in particular (Shonfield, 1965).

POSEEDOR

<5>

1. We would argue that this sense of socio-historical specificity becomes even more crucial as we consider the relationship of monopoly capitalism and military spending.

INTERPERS

PORTADOR-ADSCRIPTIVO

2. This is especially evident in the case of the US, a nation which emerged from World War II as the pre-eminent capitalist nation and as the organiser and military protector of the capitalist world economy.

PORTADOR-ADSCRIPTIVO

3. Other capitalist countries either had less economic and strategic need to resort to military expenditure or were actually barred from massive re-armament (e.g. Japan).

POSEEDOR

4. To ignore these differences, which are further exacerbated by the linkages among nations in the world system (Sweezy, 1973) and by international treaties (Snyder and Kick, 1979), simply compounds this problem.

EXPERIMENTANTE COMO CIRC-CONDICION

5. Thus to assume that all capitalist nations are somehow units of the same 'statistical population' risks seriously misunderstanding intra-national processes.

TEX

AGENTE COMO CIRC-CONDICION

<6>

1. Smith (1977) defends his use of a cross-sectional design by noting that time-series data for an individual country reflect a number of 'political and economic' factors and these will be specific to the historical development of each nation.

EMISOR

2. Hence, the use of the simpler cross-sectional data and design is thought to be useful for uncovering systematic similarities between countries which may reflect 'common pressures of state actions'(p, 71).

TEX PORTADOR-ADSCRIPTIVO

3. We believe that a premature attempt to detect common processes simply reduces the likelihood of gauging those processes accurately in any given nation.

INTERPERS CAUSANTE-ADSCRIPTIVO

4. We are not disparaging cross-national research in general; our basic point simply is that there may not be a common linkage between economic fluctuations and military spending in all capitalist nations.

EXPERIMENTANTE-AFECTIVO

5. This applies both at the conceptual level (does military spending mean the same thing in Canada and the United States?) and to equation specification (are the functional forms of the variables the same? are the lag structures constant across nations?)

PORTADOR-CIRC-LUGAR

6. We offer one additional criticism of this aspect of Smith's original research.

O.T. EMISOR

7. His data are for selected periods (e.g., depending on the hypothesis tested, 1960-1970, 1973, etc.), while Baran and Sweezy identify the entire post-war period as the relevant time-frame.

PORTADOR- CIRC-DESTINATARIO

8. To truncate or extend the theoretically relevant sample period artificially can have important consequences for parameter estimates.

CAUSANTE-EXISTENCIA

9. Moreover, Smith's (1978) time-series analysis of UK data , while informative, is not conclusive, especially if, in fact, the pegging of military outlays on the domestic political economy is a uniquely American phenomenon.

TEX PORTADOR-ADSCRIPTIVO

10. Below we show how the general argument that political-economic linkages must be studied in specific socio-historical contexts (in this case, the United States) bears on the relationship between military spending and capitalist stagnation.
O.T. CIRC-LUGAR(TEX)

THE SOCIO-HISTORICAL CONTEXT

<7>

1. The reorganization of the US economy beginning in the late 19th century and culminating in the Great Depression and the Second World War completed the historical development of a 'dualistic' industrial order.

AGENTE

2. Though an obvious simplification, we can nonetheless consider the private economy in the US today as consisting of two distinct capital sectors, the monopoly and competitive (O'Connor, 1973; Averitt, 1968 and Galbraith, 1967 use different labels for these sectors but imply the same substantive phenomena).

CIRC - CONCESION

3. The monopoly sector is composed of industries dominated by large, oligopolistic firms with substantial power and control over their product markets and the economy generally.

POSEEDOR

4. The competitive sector, on the other hand, consists of those industries containing small, single-product firms with few extra-market resources and minimal economic or political power.

POSEEDOR

5. Both firms and workers in the monopoly sector are assumed to be more prosperous than their competitive-sector counterparts.

PORTADOR-ADSCRIPTIVO

6. Labour in the monopoly sector is also much more heavily unionised, thus magnifying wage differentials across capital sectors.

PORTADOR-ADSCRIPTIVO

7. The dual economy perspective, then, argues that accumulation patterns in contemporary American capitalism have resulted in the segmentation of industries and labour.

EMISOR

<8>

1. We argue that an analysis of state economic intervention of any sort in the US must necessarily address the dualistic nature of capitalist production as this represents the fundamental institutional context within which state fiscal policies are enacted and implemented (see also Griffin et al., in press).

INTERPERS

AGENTE

2. O'Connor (1976), for example, argues that in the US the state's ability to finance its expenditure depends disproportionately on revenue from the monopoly sector and on favourable business conditions, which are increasingly affected by patterns of private investment in the monopoly sector in particular.

EMISOR

3. In short, the monopoly sector is thought to be the 'engine' (O'Connor 1973, p.23) of capital accumulation and economic growth necessary for general prosperity and social harmony, an assertion receiving some empirical support in Griffin et al. (in press).

TEX IDENTIFICADO

4. This effectively means that if the monopoly sector (and not necessarily the aggregate economy) is economically depressed or stagnating, the state is likely to respond with some fiscal stimulus (increased expenditure and/or reduced tax rates).

TEX CIRC-CONDICION

5. In the US fiscal stimulant has often (but not exclusively) taken the form of an enlarged defence budget.

CIRC-LUGAR

<9>

1. The presumed critical importance of military expenditure in the US ultimately rests upon a particular Marxist view of the state.

AFFECTADO

2. Unlike the pluralist Keynesian view (c.f. Heller, 1967; Hartley and Mclean, 1978), which conceives of the state as an institution standing above classes and representing the general interest of society, some Marxists argue that state intervention in the economy is necessarily motivated by the long-term interests of capital.

CIRC-COMPARACION

3. Military expenditure, unlike most civilian government expenditure, is thought by many Marxists (especially Baran and Sweezy, 1966) to ensure most effectively the viability of the capitalist order because: (1) armaments are quickly consumed or become obsolete, ensuring a never-ceasing demand for weapons; (2) powerful ideological rationales, centering around the Cold War of the 1940s and 1950s and the now resuscitated global tension and insurgency, exist to reinforce a high level of such expenditure; (3) the threat or use of United States military power functions to maintain American political and economic hegemony in the capitalist world system; and (4) massive social service expenditures by the state are not a desired alternative because the expansion of the civilian state may compete with private enterprise and profit-making, redistribute income in favour of labour, or weaken the disciplinary or control functions exerted by the labour market over the working class.

CAUSANTE-ADSCRIPTIVO

<10>

1. We are not suggesting that America has maintained a permanent arms economy simply because of some mechanical economic determinism, but rather because of the combination of the structural constraints impinging on the state budget due to the economic centrality of the monopoly sector and the crystallisation of political forces in the US after the Second World War.

INTERPERS

AGENTE

2. American economic policy since the war has been controlled by what Gold (1977) has labelled the 'center Keynesian coalition', the members of which include social spending advocates dedicated to Keynesian style 'demand-management', Cold War protagonists interested in the containment of the Soviet Union, and élite business people committed to the expansion of monopoly capital (see Block, 1977 for further discussion).

OBJETIVO

3. A compromise was reached within this 'center' coalition during the late 1940s based on the agreement that, when technically and politically feasible, military expenditure -not civilian spending- could best address the goals of big business, organised labour, and political strategists.

OBJETIVO

4. 'Military Keynesianism', i.e., the policy of using the defence budget as a counter-cyclical and economic growth device, then, was the chosen mechanism through which economic stabilisation and simulation and the protection of the capitalist world economy were to be insured.

IDENTIFICADO

<11>

1. Thus, we argue, military spending in the US has been (and, as of the late 1970s, continued to be) employed by state managers in an attempt to increase effective demand for monopoly products (Baran and Sweezy's 1966 thesis), stimulate research and development and technological innovation, and secure monopoly capital's foreign markets against military adversaries and ideological and nationalist opponents (O'Connor, 1973).

TEX INTERPERS OBJETIVO COMO MEDIO

2. The monopoly sector, therefore, actively courts government intervention of certain types because accumulation and growth in that sector rests on the continued expansion of military expenditure to socialise these these investment and consumption costs.

AGENTE

<12>

1. Monopoly profits depend not only on state intervention, of course, but also on a relatively productive, disciplined labour force.

AFECTADO

2. A chaotic labour market cannot guarantee a regular supply of competent labour.

CAUSANTE-EXISTENCIA

3. Unions can, however, and in return for doing so organized labour has become an essential component of contemporary American capitalism.

CAUSANTE-EXISTENCIA

4. Compared to the unorganised segments of the working class, unionised labour is, as we noted above, better paid and exercises greater political influence due to its membership in the dominant Keynesian coalition.

CIRC-COMPARACION

5. The economic advantages of organised labour depend on full or nearly full employment and, via their political influence (which is arguably greater during democratic administrations), unions attempt to direct state policy toward that objective.

AFECTADO

6. The economic and political impact of organized labour is further magnified by its close functional tie with the monopoly sector.

AFECTADO

7. When necessary, then, the state responds to stagnant or depressed employment conditions in the unionised sector by some fiscal stimulant, often military spending.

CIRC-TIEMPO

8. That defence industries in the US are located predominantly in the monopoly sector (Marfels, 1978) and are heavily unionised (Freeman and Medoff, 1979) obviously accentuates the likelihood that the particular stimulant will be increases in the defence budget.

CAUSANTE-ATRIBUTIVO

9. All of these considerations suggest that the US's defence burden is not exclusively or even predominantly a function of geo-politics, international tensions, or the arms race, but, rather, a consequence of domestic economic conditions, especially the accumulation and employment conditions of monopoly capital and organized labour.

CAUSANTE-COGNITIVO

THE PRESENT RESEARCH

<13>

1. In this paper we attempt to answer the following questions: is military spending in the US simply a reaction to international tensions and geo-political considerations or is America's defence budget also governed by economic vicissitudes in 'key' sectors of capital and labour?

O.T. CIRC-LUGAR(TEX)

2. And, do state managers display a policy preference for military rather than civilian spending for strictly economic reasons or is the composition of the federal budget also determined by (internal and external) political events?

TEX POSEEDOR

3. Our data, annual economic and and political observations, pertain to the period 1949-1976.

PORTADOR-CIRC-PROCEDENCIA

4. We use two distinct measures of the military burden: first, following Smith (1977), we express military expenditure as a percentage of Gross National Product (GNP) so as to index the degree to which national output is 'absorbed' by military spending (Baran and Sweezy, 1966); second, we express military spending as a percentage of total federal spending so as to allow a direct test of the 'relative sensitivity' thesis; i.e., the proposition that military rather than civilian outlays will be employed to offset tendencies to stagnation.

AGENTE

5. The data sources for all variables appear in the appendix.

PORTADOR-CIRC-LUGAR(TEX)

<14>

1. We begin our analysis by specifying the impact of four possible geo-political influences on military spending: international crises (the number of international incidents per year in which the US displayed 'force threat' but did not actually use military force), USSR military expenditure as a percentage of US GNP, casualties (the number of wartime dead, an index empirically superior to either a simple war-year dummy or Korean and Vietnam dummies), and detente (a dummy for the years 1972-1976).

O.T. EMISOR

2. Statistical significance and explanatory power suggested the appropriate specification and lag structures of these variables.

CAUSANTE-COGNITIVO

<15>

1. We present in table 1 generalized least squares (GLS) estimates each variable, first, with all other variables omitted (see columns (1)-(5)) and then with all other variables included in the equation (see columns (6) and (7)).

O.T. EMISOR

2. The second order GLS transformation was necessary to purge the estimated equation of autocorrelation.

PORTADOR- ADSCRIPTIVO

3. These preliminary analyses suggest that both measures of US military expenditure are sensitive to these indicators, with crises, USSR military spending, and casualties all stimulating and detente retarding defence spending for the years 1949-1976.

CAUSANTE-COGNITIVO

4. All coefficients are in the expected direction (and statistically significant for the GNP-based measure).

PORTADOR-ADSCRIPTIVO

5. Thus the view that US militarism is a function of geo-political and international tension factors seems supported by the data.

TEX

OBJETIVO

<16>

1. We argued earlier, however, that inferences resting on analyses such as those presented in table 1, which exclude domestic economic variables, are seriously incomplete and possibly spurious.

TEX

TEX

PORTADOR-ADSCRIPTIVO

2. We bring data to bear on these speculation in table 2, where we present the effects on defence outlays/GNP of a variety of sector-specific economic influences, four budgetary and/or 'political' constraints on state spending, and the geo-political variables.

O.T. EMISOR

3. This model is based on other current research (Griffin et al., in press) where we provide, in fuller detail, our rationale for this specification and for the necessity of examining sector-specific, rather than aggregate, influences.

PORTADOR-ADSCRIPTIVO

4. We control for revenue, civilian spending, and inflation since they represent budgetary and /or political (e.g., the inflation rate) limitations on the degree to which state managers can increase the defence budget.

AGENTE

5. We have also included the timing of presidential electoral years on the assumption that in years immediately preceding presidential elections state managers increase military outlays in an attempt to 're-heat' the economy so as to increase their popularity and the likelihood of their re-election (see Tufte, 1978).

AGENTE

<17>

1. We expect the impact of unemployment in the unionised sector to be positive because stagnation in that sector should provoke state managers to increase military expenditure in an attempt to stimulate the employment of organized labour.

EXPERIMENTANTE-COGNITIVO

2. The monopoly-profits coefficient should be negative because a decreasing rate of growth of profits in monopolised industries should stimulate defence outlays as state managers attempt to create or recreate an economic climate which is conducive to further business investment.

PORTADOR-ADSCRIPTIVO

3. Increasing industrial concentration should be linked both to a rise in the potential surplus (Baran and Sweezy, 1966) and to a curtailment of output, generating what O'Connor (1973, p.150) calls 'surplus capital'.

PORTADOR-ADSCRIPTIVO

4. Thus we expect concentration to increase military spending relative to GNP.

TEX EXPERIMENTANTE-COGNITIVO

<18>

1. All control variables have the expected signs, with electoral timing and revenues stimulating and civilian spending and inflation depressing military expenditure/GNP (see column (1)).

POSEEDOR

2. As expected, unemployment among the ranks of organised labour and increasing industrial concentration increase defence outlays, while the growth rate of monopoly profits decreases such expenditure.

CIRC-COMPARACION

3. Before commenting on these results, we first need to see if controls for the geo-political influences 'wash' away these effects.

O.T. CIRC-TIEMPO(TEX)

4. We therefore add separately to the equation each of the four geo-political variables shown to be important in table 1 in columns (2)-(5) of Table 2.

AGENTE

5. The results of these better-specified equations are clear: all domestic political-economic processes continue to affect defence spending/GNP significantly, but the geopolitical variables are reduced in magnitude (crisis, detente), reverse sign (USSR military expenditure), and are generally non-significant.

PORTADOR-ADSCRIPTIVO

6. Only casualties (logged and lagged one year), among the four variables indexing potential international tension effects, significantly stimulates defence outlays.

AGENTE

7. Results not presented here also indicate that alternative measures of the four geo-political influences (see footnote on p.5) and alternative specifications of the equations (e.g., combining the four international tension variables in various ways) do not alter these essentially null findings.

CAUSANTE-COGNITIVO

8. The apparent importance of most of the geo-political variables observed in Table 1 now appears to be simple statistical artifacts of equation mis-specification.

PORTADOR-ADSCRIPTIVO

9. When domestic economic and political conditions are adequately controlled, then, geo-political and international tension variables are, at best, of marginal importance in determining the degree to which military expenditure absorbs national output.

CIRC-TIEMPO

10. Moreover, the results indicating the importance of domestic and economic influences appear quite robust and, as Table 3 indicates, can broadly be generalised to the components of total defence spending, personnel-related costs and procurement outlays (see also Nincic and Cusack, 1979 who report similar findings).

TEX

PORTADOR-ADSCRIPTIVO

<19>

1. We believe these results satisfactorily address the first question we posed earlier and lend considerable support to a modified (i.e., sector-specific) Marxist interpretation of the relationship between the 'absorption' functions of military expenditure and economic prosperity in the US:

INTERPERS

AGENTE

2. Military outlays (as a percentage of GNP) do appear to be employed as a counter-cyclical fiscal instrument by the state, and their use seems to be affected predominantly by economic fluctuations and trends in politically and economically dominant sectors of labour and capital and much less so by real or by perceived threats from political opponents or by 'legitimate' defence 'needs'.

OBJETIVO COMO MEDIO

3. Analyses not presented here suggest, moreover, that insofar as the aggregate economy affects defence spending, its impact is essentially derivative from and based on the accumulation and employment situations of the monopoly/unionised sectors (see Griffin et al., in press).

CAUSANTE-COGNITIVO

4. Thus, military Keynesianism in the US appears to be employed in the interests of organised labour and monopoly capital and not necessarily to offset stagnation or cyclical downturns in either the aggregate economy or the less influential sectors of capital and labour.

TEX

OBJETIVO COMO MEDIO

<20>

1. We now address the second question posed above, i.e., the neo-Marxist notion that military expenditure is used more frequently or more intensively than is civilian expenditure.

O.T. AGENTE

2. In the ensuing analyses, we examine the domestic and international determinants of the composition of the federal budget ; that is, military expenditure as a percentage of total federal spending.

O.T. CIRC-LUGAR(TEX)

3. If state managers do, in fact, prefer (or are constrained) to extend public monies for military rather than civilian purposes during economically depressed periods (and years of increasing industrial concentration), we should see that policy reflected in increased defence outlays relative to total outlay.

CIRC-CONDICION

<21>

1. Preliminary analyses suggested (a) that the specification of the composition equations should control for revenue/GNP and a dummy indexing Democratic presidential incumbency and (b) that international crises and inflation were not significant and could be omitted.

CAUSANTE-COGNITIVO

2. In the previous analyses, we used revenue/GNP as a measure of the state's ability to finance expenditure.

CIRC-LUGAR

3. The meaning of that variable in the composition equations, however, is assumed to represent one dimension of internal state strength since it indexes the total economic resources available to the state (Rubinson, 1976).

PORTADOR-ADSCRIPTIVO

4. Internal state strength should affect the degree to which the state can both protect its own boundaries and extend its hegemony over weaker states via militarisation of the state budget.

AGENTE

5. Finally, the party of the president is included in the equation because both the Korean and Vietnam conflicts were initiated and continued under Democratic administrations.

TEX

PORTADOR-CIRC-LUGAR

<22>

1. Table 4 contains GLS-AR(2) estimates of the influences of these two controls and all domestic and geo-political variables registering significant effects in previous analyses (see column (1)).

POSEEDOR COMO EMISOR

2. Both the revenue variable and the Democratic administration dummy variable increase military outlay relative to total outlay.

AGENTE

3. More importantly, all indicators of geo-political considerations are in the expected direction and statistically significant, with casualties and USSR military expenditures increasing and détente decreasing the relative share of the federal budget devoted to defence.

INTERPRS PORTADOR-ADSCRIPTIVO

4. Unionised unemployment, too, significantly and, as expected, positively alters the composition of the budget in favour of the military spending, suggesting that state managers do manipulate expenditure patterns in response to employment conditions in unionised industries.

AGENTE

5. Neither monopoly profits nor concentration, however, significantly influence the defence share (though the profit coefficient is in the expected direction and approaches significance).

AGENTE

6. The coefficients of both of these variables (as well as electoral timing), moreover, continue to remain statistically unimportant, or, at best, unstable when evaluated in simpler models (see columns (3)-(5)) or when assessed with alternative lag structures (data not presented).

PORTADOR-ADSCRIPTIVO

7. In sum, these mixed but generally negative results cast considerable doubt on a strictly economist — neo-Marxian interpretation of the composition of state expenditure.

TEX

CAUSANTE-EXISTENCIA

<23>

1. We have thus far, however, assessed only the additive influences of these variables, implicitly assuming no statistical interaction between economic fluctuations and domestic political events.

O.T. AGENTE

2. One implication of the presumed penetration of the Democratic Party by organised labour (Greenstone, 1977) is that military expenditure might be invoked more frequently or with greater intensity during Democratic administrations.

IDENTIFICADO

3. We did not find any consistent evidence, however, that this actually occurred during the post-War period (data not presented), suggesting that the (at best) weak support for the 'relative sensitivity' hypothesis is not strengthened by considerations of party-specific reactions to capitalist stagnation.

AGENTE

<24>

1. There is also reason to believe that the impact of economic cycles in key sectors depends on whether or not there is a presidential election.

INTERPERS

AFECTADO

2. Our reasoning here is that continued incumbency in political office probably depends on minimal appeasement of the demands of the politically and economically influential sectors of organised labour and monopoly capital.

INTERPERS

AFECTADO

3. This means in effect the pursuit of expansionary fiscal programmes to stimulate employment and provide a 'healthy' business climate in years immediately preceding an election.

IDENTIFICADO

4. Analyses not presented here did suggest that the effects of unionised unemployment and the growth rate of monopoly profits were conditioned by the electoral cycle.

CAUSANTE-COGNITIVO

5. These patterns are perhaps more explicit in the results presented in column (1) of Table 5, which excludes concentration and non-election-year profits since our previous (unpresented) analysis had indicated that these terms were insignificant.

PORTADOR-ADSCRIPTIVO

5. Here, we see the importance of all geo-political variables, of both election and non-election year unionised unemployment, and of the growth rate of monopoly profits only in years immediately preceding an election.

TEX EXPERIMENTANTE-PERCEPCION

6. The lagged election year variable itself appears to depress defence's relative share, perhaps because state managers attempt to 'woo' the electorate with increases in such non-defence outlays as transfer payments during these years (Griffin et al., 1981; Tufte, 1978).

AGENTE

7. The interaction analysis supports the notion that if some fiscal stimulant is necessary to offset unemployment and (before elections) falling profits, state managers alter the composition of the federal budget, increasing military expenditure relative to civilian expenditure.

CAUSANTE-COGNITIVO

8. These results are broadly consistent with the neo-Marxist notion that military rather than civilian spending is the preferred stimulant.

PORTADOR-ADSCRIPTIVO

9. We emphasise again, however, the complexity of these processes and caution against any simple translation of the economic 'needs' of US capital or labour into fiscal policies: internal political events - here presidential elections- affect the degree to which economic fluctuations in monopoly and organised industries are salient and, obviously, external, geo-political events such as détente, the military posture of the Soviet Union, and the engagement of the United States in shooting wars are crucial for a complete understanding of the forces affecting the composition of the federal budget.

EMISOR COMO AGENTE

<25>

1. The use of the military budget as a counter-cyclical fiscal instrument is not an automatic consequence of general, ahistorical structural instabilities presumably inherent in all capitalist economies.

PORTADOR-ADSCRIPTIVO

2. Only by understanding the bifurcation of the industrial order in the US, and thus the resulting economic centrality and, via their memberships in the reigning Keynesian coalition, political dominance of monopoly capital and organised labour, were we able to comprehend adequately the policy of military Keynesianism.

CIRC-MEDIO

3. Our data suggest strongly that military expenditure in the US does serve absorption functions and is systematically related to cyclical stagnation in these 'key' sectors of capital and labour and to industrial concentration.

CAUSANTE-COGNITIVO

4. Once these sector-specific economic influences are controlled, geo-political influences appeared, at best, as weak determinants of defence outlays (as expressed as a percentage of GNP), implying that a single-minded emphasis on the international context of militarism is, for some purposes, not only likely to obscure the fundamentally more important domestic economic determinants but may even be incorrect.

CIRC-TIEMPO

<26>

1. Even though we believe state managers in the US manipulate the defence budget partially for reasons internal to the domestic economy, we do not want to substitute mechanical, economic determinism as an explanation of military Keynesianism in place of the conventional wisdom of geo-politics.

CIRC-CONCESION

2. Such an interpretation would leave little room for the discretion and flexibility of judgment frequently displayed by state managers in the design and implementaion of state fiscal policy (see Block,1977).

CAUSANTE-EXISTENCIA COMO CIRC-CONDICION

3. Our analyses of the composition of the state budget, in particular, reveal that defence outlay relative to total spending is very sensitive to international political events as well as to domestic stagnation.

CAUSANTE-COGNITIVO

4. This does not contradict any of our previous inferences.

CAUSANTE-LOCUTIVO

5. American military expenditure serves two functions: to shore up the domestic economy and to integrate disparate societies into capitalist world economy (Lo,1975).

AGENTE

6. Only an expenditure having the geo-political implications of military spending can serve the latter strategic function (Smith,1977).

AGENTE

7. US militarism, then is also a function of anti-capitalist insurgency and revolution abroad and the military posture of the Soviet Union.

PORTADOR-ADSCRIPTIVO

8. That state managers appreciate the potential utility (and ignore the possible costs) of military spending is demonstrated, we believe, by current events in Washington,D.C..

FENOMENO-COGNITIVO

9. At the time of writing, less than one year into the Reagan administration, we are once again observing state managers increase military expenditure in the hope of curing a number of domestic and international ills.

CIRC-TIEMPO

<27>

1. Finally, we are not necessarily suggesting that only the US has developed a permanent arms economy to stave off economic instability, but we are arguing that analyses of capitalist stagnation and state policy must be cognisant of the social, economic, and political peculiarities of particular nations.

TEX

INTERPERS

AGENTE

2. The methodological lesson is, we believe, quite clear: static, cross-national research designs are incapable of adequately assessing historically- and culturally -specific processes.

PORTADOR-ADSCRIPTIVO

3. Country-to-country and period-to period variability may simply be too great to allow sweeping generalisations (as Smith's,1980 research on the opportunity costs of military expenditure has shown), and the choice of which nation or nations and time periods to study is as much of a theoretical issue as is formulation of the hypothesis.

PORTADOR-ADSCRIPTIVO

THE USE OF MULTIVARIATE METHODS IN ECONOMICS
WITH REFERENCE TO REGIONAL ANALYSIS

THE USE OF MULTIVARIATE METHODS IN ECONOMICS
WITH REFERENCE TO REGIONAL ANALYSIS

INTRODUCTION

<1>

1. The multiple regression estimator has been used by economists in the majority of applied statistical studies the profession has undertaken.

OBJETIVO COMO MEDIO

2. In most of the remaining studies, for example using techniques allowing for non-spherical disturbances or simultaneity, the basic model estimated has been a close cousin of the multiple regression model.

CIRC-LUGAR

3. Only recently have economists taken much cognizance of multivariate methods based on completely different models .

CIRC - TIEMPO

4. While these other methods have been used more widely in other social and natural sciences , they have in the past been considered relatively inappropriate for use in economics .

CIRC - CONCESION

<2>

1. However, appreciation of these alternative methods is growing, as evidenced by the recent appearance of brief sections on other multivariate methods in advanced textbooks of econometrics (e.g. Dhrymes (1970), Johnston (1972), Malinvaud (1970) and Theil (1971)); a few years ago such books contained no references to them (e.g. Christ (1966), Goldberger (1964) and Johnston (1963)).

TEX

AFECTADO

2. In applied studies recognition must be given to the work of Adelman and Morris who introduced a variety of these alternative techniques into the development field (e.g. Adelman and Morris (1965,1967,1968)), although their introduction was not methodological disagreement (e.g. Brookins (1970) and Rayner (1970)).

CIRC - LUGAR

3. Within the framework of regional studies the work of Reiche (1972) and Ranner (1974) is illustrative of the growing awareness of the usefulness of these alternative methods.

CIRC - LUGAR

<3>

1. Very recently a group has presented a new and original overview of multivariate methods in a series of papers given at the Third World Congress of Econometrics held in 1975 (Wold (1975)).

CIRC -TIEMPO

2. These studies suggest that there is a continuum of approaches to model construction, starting from 'soft' models which require little or no prior information, as exemplified by cluster analysis, and extending through a range of techniques each of which requires an increasing use of prior information.

EMISOR

3. Eventually 'hard' models are reached in which the model is fully specified a priori and is then estimated by multiple regression.

CIRC - TIEMPO

4. This overview allowed the interrelationships between the different kinds of analyses to be placed in perspective and has led to the development of new techniques which combine the approaches of traditionally separate methods.

CAUSANTE - ADSRIPTIVO

5. These new Non-linear Iterative Partial Least Squares (NIPALS) methods, while still in the early stages of development, may eventually lead to a considerable re-organisation of multivariate methodology.

CAUSANTE - EXISTENCIA

<4>

1. This present paper does not attempt to give a basic theoretical comparison of traditional and new multivariate methodology, nor does it give examples of the new NIPALS methods since they are still in their formative stages.

O.T. EMISOR

2. The more limited aim is to show possible uses of four traditional methods which seem particularly useful in the study of regional economics, namely, multiple regression using principal components, factor analysis, discriminant analysis involving another use of principal components, and canonical correlation.

O.T. IDENTIFICADO

3. The method adopted to compare and contrast the techniques is to make careful note of the assumptions involved in each model and to apply each form of analysis to variables drawn from the same set of data.

IDENTIFICADO

4. In the next section the data used in the study are presented while the remaining four sections deal with the four multivariate methods.

O.T. CIRC -LUGAR (TEX)

2. DATA

<5>

1. The data used in this study were designed to measure (i) living standards, (ii) economic and social variation, and (iii) the general attraction for industry of the Auckland urban areas which form the only growth node in the country.

OBJETIVO

<6>

1. For this paper an estimate was made of the 1971 per capita income level (INCOME) in New Zealand's twenty-four urban areas, the derivation of INCOME being described in the appendix.

CIRC - DESTINATARIO

2. In addition to INCOME other 'standard of living' measures were considered.

CIRC - ADITIVO

3. Variables were obtained to measure the extent of telephone services (TELEPF), consumer durable ownership (DEEPPR; WASHMA;TELEVI), and sanitation facilities (FLTOIL).

OBJETIVO

4. Social conditions were measured by divorce rates (DIVORC), religious adherence (ATHIES), racial composition (MAORIS), and factors reflecting demographic structure, namely birthrates (BIRTHR), deathrates (DEATHR), and the ratio of males and females (MALFEM).

OBJETIVO

5. Economic conditions were measured by variables showing the dependence on agriculture (AGRDEP), the degree of industrialization (MANPER), unemployment rates (FEMAUN; MALEUN), population size (POPSIZ), and population density (POPDEN).

OBJETIVO

<7>

1. Many studies, including those of Hampton and Giles (1976) and McDonald (1970), have stressed the existence of a drift of population and industry to the North Island in general and the north of the North Island (Auckland) in particular.

EMISOR

2. In 1971, the Auckland area, consisting of the four adjacent urban areas, Northern Auckland, Western Auckland, Central Auckland and Southern Auckland, had a population of 649,000, approximately one quarter of New Zealand's total population.

CIRC - TIEMPO

3. To allow for the attraction exercised by this growth centre with its plentiful factor inputs and large final demand sector, the following variables were incorporated into the analysis; temperature (TEMPER), road distance to Auckland from each urban area (DISTAN), airfreight rate to Auckland (AIRFRE), a dummy variable taking the value one-hundred for a North Island area and zero for a South Island area (DDUMMY), out-migration (OUTMIG), and in-migration (INMIGR).

CIRC-FINALIDAD

4. Exact definitions of all variables used, together with data sources, are given in the appendix.

PORTADOR - CIRC - LUGAR (TEX)

5. In order to avoid the scale of the variables influencing the analysis at any point, they were all standardized to have constant means (zero) and standard deviations (unity).
CIRC -FINALIDAD

<8>

1. It is usual for regional studies using multivariate methods to be conducted using a large number of areas in order to avoid some of the statistical problems associated with the use of a limited number of observations.

INTERPERS

OBJETIVO

2. In particular many statistical procedures only have asymptotic justification and are likely to be incorrect for small samples.

TEX

POSEEDOR

<9>

1. In this study we were restricted to considering the twenty-four urban areas in New Zealand since these are the smallest-size populations groupings for which adequate data are available.

CIRC - LUGAR

2. They represent areas of unified community, economic and social interest.

IDENTIFICADO

3. The relatively small number of observations will, of course, lead to some of the statistical tests being somewhat unreliable.

CAUSANTE - ADSCRIPTIVO

<10>

1. The twenty-four areas were each denoted by a number, the actual areas and the assigned numbers being set out in the appendix.

OBJETIVO

2. As a general rule these numbers increased the farther south in latitude the area was, with numbers 1-19 representing North Island cities and 20-24 representing south island cities.

INTERPERS

PORTADOR - ADSCRIPTIVO

3. It has often been suggested that these two main islands are very different to each other and this simple hypothesis formed the point of departure for our analysis.

INTERPERS

PORTADOR - ADSCRIPTIVO

4. Four variables which were highly correlated with latitude, namely DISTAN, AIRFRE, DDUMMY, and TEMPER were discarded, since for physical reasons their values clearly differ between the two islands.

OBJETIVO

5. On the other hand there is no such presumption that the remaining twenty variables, reflecting social, economic and demographic features, would exhibit such differences.

TEX

INTERPERS

POSEEDOR

6. Calculation of the Generalized Mahalonobis D-square statistic showed that the null hypothesis, that means of these twenty variables are the same in both islands, could be rejected at an extremely high level of significance.

CAUSANTE - COGNITIVO

7. The country does indeed appear to be split into two disparate parts.

PORTADOR - ADSRIPTIVO

3. MULTIPLE REGRESSION

<11>

1. The simplistic analysis of income determination under competition portrays a situation where labour is paid its marginal product.

CAUSANTE - COGNITIVO

2. According to this model, assuming either lack of mobility or non-homogeneity of labour, wage differentials are explained by differences in marginal productivity.

CIRC - EMISOR

3. If one accepts this theory and puts it in the context of explaining the differences in average income per capita between various areas of a country, then these differences should be explicable in terms of varying average marginal productivity between the areas.

CIRC - CONDICION

<12>

1. There are two ways in which the differences in marginal productivity could be explained.

EXISTENTE

2. One explanation envisages that in any particular area, the labour force and the quality and quantity of associated factors are homogeneous, but that these area characteristics differ from one part of the country to another.

EMISOR

3. The second, more plausible explanation, allows the labour force and other factors in an area to be non-homogeneous; there are a number of differently skilled workers doing different kinds of work.

EMISOR

4. Furthermore, the proportions of each factor type differ from one area to the next.

TEX

PORTADOR - ADSRIPTIVO

5. The consequences of either explanation are similar.

PORTADOR - ADSRIPTIVO

6. If one could measure the average value of the variables that determine marginal productivity, these would differ between areas.

CIRC - CONDICION

<13>

1. Many variables that influence labour productivity are either conceptually not directly measurable, or not in fact measured.

PORTADOR - ADSCRIPTIVO

2. However, there are other socio-economic features of an area that do affect labour productivity and are measurable.

TEX EXISTENTE

3. Thus, for example, differences could be expected in marginal productivity when comparing relatively rural/agricultural and urban/manufacturing areas, or between areas with a young mobile workforce and those where it is older and more stable.

TEX TEX EXISTENTE

4. Again, marginal productivity is likely to be higher, other things being equal, the easier the area's access to a growth centre: the Auckland area in the case of New Zealand.

TEX PORTADOR - ADSCRIPTIVO

5. The implication of the approach is that differences in per capita income in the urban areas are determined by varying marginal productivities, which, while not directly measurable themselves, are explained by certain socio-economic characteristics of the areas.

IDENTIFICADO

<14>

1. In order to explore this suggestion, a principal component analysis of the entire twenty-three standardized socio-economic variables, other than per capita income, was performed.

CIRC - FINALIDAD

2. It was hoped that the principal components would capture the variables that affect the differences in marginal productivity between regions.

INTERPERS AGENTE

3. While it is likely that several of the twenty-three variables would not affect marginal productivity, no attempt was made to remove such variables on prior grounds.

CIRC - CONCESION

4. The reasons for this were two-fold: first because the statistical problems caused by the presence of extraneous variables are much more severe than those caused by the incorrect exclusion of variables, and secondly because the next stage of the analysis itself effectively removes unnecessary information.

PORTADOR - ADSCRIPTIVO

<15>

1. The first six components explained 89% of the variance of the original series.

AGENTE

2. Their variances and their cumulative explanation of total variance are given in table 1.

PORTADOR - CIRC - LUGAR (TEX)

<16>

1. The principal components were then used as explanatory variables in a stepwise multiple regression analysis, where standardized per capita income was the endogenous variable.

OBJETIVO COMO PAPEL

2. If some of the components had indeed captured the determinants of varying marginal productivity, they should have proved significant in the explanation of differences in per capita income.

CIRC - CONDICION

<17>

1. The emphasis in this kind of multivariate analysis is on causation.

PORTADOR - CIRC - LUGAR

2. Differences in income per capita are caused by differences in marginal productivities.

RESULTADO

3. This would appear more directly in the analysis if marginal productivity itself could be measured, or if all the determinants of marginal productivity could be measured and there were sufficient observations to include all of them as explanatory variables determining income per capita.

PORTADOR - ADSCRIPTIVO

4. With neither measurements of all the variables, nor even enough observations to make multiple regression on all the variables useful, the principle components were used to summarize what information there was into new composite variables which themselves determined income per capita.

CIRC - CAUSA

5. To the extent that the marginal productivities were determined by the observed socio-economic variables, then, provided these variables were efficiently summarized by the principal components, these components should have been significant determinants of income per capita.

CIRC -CONDICION

<18>

1. It should be noted that in this case there was no idea of there being an attempt to estimate underlying factors that explained the twenty-three socio-economic variables used.

INTERPERS CIRC LUGAR

2. All that was being attempted was to summarize the information contained in these variables, to investigate the extent that this information explained income per capita.

IDENTIFICADO

3. Thus, for this analysis the first few principal components of the variables were required, rather than the rotated factors.

TEX CIRC - PROPOSITO

<19>

1. Before examining the results of the regression, one further aspect of causation must be mentioned.

CIRC - TIEMPO (TEX)

2. It could perhaps be argued that a multiple regression estimate of our model was inappropriate, because the model was, in part, simultaneous.

INTERPERS INTERPERS PORTADOR - ADSCRIPTIVO

3. Income per capita might be thought to have been at least as much a determinant of varying ownership of television as the latter was a determinant of the former.

PORTADOR - ADSCRIPTIVO

4. This line of argument is rejected here since the values of these socio-economic variables were taken to be historically given, so that the marginal productivities were also historically given.

OBJETIVO

5. It was through this historically given value of the latter that current income per capita was determined.

T.P. CIRC - MEDIO

6. Changes in income per capita will indeed affect such things as the ownership of television, but only in the future.

AGENTE

<20>

1. The results of the stepwise regression are given in table 2, with the principal components appearing in the order they were introduced by the stepwise programme.

PORTADOR - CIRC - LUGAR (TEX)

2. The three principal components excluded from the analysis all had coefficients whose computed values were much smaller than the three included components; the values of the former not being significantly different from zero at the 5% level of significance.

POSEEDOR

<21>

1. The results of the regression are interesting.

PORTDOR - ADSCRIPTIVO

2. They do appear to confirm the hypothesis that these socio-economic variables, as summarized by their principal components, were significant determinants of per capita income.

AGENTE

3. The three components selected explained over 80% of the variance of per capita income between the areas and all have coefficients which were significantly different from zero at the 1% level of probability.

AGENTE

4. The most interesting aspect of the results appears from an examination of the order that the principal components were selected.

PORTADOR - CIRC - PROCEDENCIA

5. It is not suprising that component 6 was not selected, since its variance was relatively small.

INTERPERS

OBJETIVO

6. What is surprising is that component 1 was never selected in spite of its high variance and that 2 was selected first even though it explained a smaller proportion of the variance of the original variables.

INTERPERS

OBJETIVO

7. On its own component 2 explained 60% of the variance of income per capita.

AGENTE

<22>

1. Consideration must thus be given to the meaning attached to these principal components.

OBJETIVO COMO PROCESO COGNITIVO

2. While they are all summaries of the twenty-three variables, some of these variables contained information which was irrelevant in the determination of the average marginal productivity of a region.

CIRC - CONCESION

3. Since the principal components were orthogonal, the irrelevant information was limited to a small number of components, while the information that was most relevant may have been concentrated in one or two components.

CIRC - CAUSA

4. The results of the regression show both of these facets of the principal component analysis.

CAUSANTE - COGNITIVO

<23>

1. There is a temptation to examine the components to try and discover what kind of information it was that, for example, 2 contained which 1 did not.

EXISTENTE COMO PROCESO AFECTIVO

2. However, this is not relevant in the multiple regression model even if principal components are being used, since they are merely a convenient method to summarize most of the information in the explanatory variables.

TEX PORTADOR - ADSCRIPTIVO

3. In the case of factor analysis on the other hand, the search for such an interpretation of an artificial variable is the whole purpose of the approach.

CIRC - TEMATICA

4. FACTOR ANALISIS

<24>

1. In any multiple regression model the concept of causation and the distinction between endogenous and exogenous variables are central.

CIRC - LUGAR

2. While, in the example considered in the previous section, these issues were complicated by the relative scarcity of observations and the consequent use of principal component analysis, they were in fact fundamental to the methodology.

CIRC - CONCESION

<25>

1. Factor analysis also uses the concept of causation; the vital distinction between the two approaches is that in factor analysis the variables that determine the values of the observed variables are themselves unobservable.

AGENTE

2. Indeed the factor analysis model is full of indeterminacies which can be only partly overcome by a series of strong assumptions.

TEX PORTADOR - ADSCRIPTIVO

<26>

1. In analytic terms the model examined in this section is as follows.

CIRC - PUNTO DE VISTA

2. The socio-economic performance of any area is determined by immeasurable underlying factors such as, perhaps, the extent that an area is agricultural rather than industrial.

OBJETIVO

3. While these factors are not directly measurable, nevertheless their value differs from one area to another.

CIRC - CONCESION

4. These underlying factors determine the values of certain measurable variables, such as income per capita or population density.

AGENTE

5. Specifically it was assumed that the observed value of any one of the variables was determined by a linear combination of the underlying values of the factors.

TEX PROCESO COGNITIVO

6. The weights attached to each factor differed according to the observed variable being determined.

PORTADOR - ADSCRIPTIVO

7. For any one particular variable the weights were the same for every area; the differences between the observed values being caused by differences between areas in the underlying values of the factors.

CIRC - TEMATICA

8. A purely economic factor could have been expected to have greater weight in determining variables that were largely economic while a demographic factor would have had more effect on those that were demographic.

POSEEDOR

9. The weights attached to each factor in determining each variable are called the factor loadings.

IDENTIFICADO

<27>

1. The present use of factor analysis assumes that the matrix of factor loadings is the same for each area, while the vector of values of the factors differs from one area to another.

EXPERIMENTANTE - COGNITIVO

2. It is not possible to observe these factors, nor to know what it is that they are measuring, but it is possible to make enlightened guesses about the matter based on the factor loadings.

EVALUACION

3. Thus, if it is clear from these loadings that in the main a particular factor only influences certain variables, then a consideration of any common characteristics of these variables can sometimes throw light on what the factor is.

TEX

CIRC - CONDICION

<28>

1. In terms of the mechanics of obtaining the factor loadings, a commonly used technique is to take the eigen vectors from which the principal components of the original variables were derived, multiply them by some constant so that the derived components would have standardized variance, and then rotate vectors, in such a way that the loadings change to ensure that each factor becomes more closely associated with some variables and less with others.

CIRC - PUNTO DE VISTA

2. After adopting this procedure the proportion of the variance of any particular variable determined by the factors is the sum of squares of the relevant loadings.

CIRC -TIEMPO

3. While they are similar in interpretation to the square of the multiple correlation coefficient, in that both measure the proportion of variance explained in a particular variable, they are based on totally different methodology.

CIRC - CONCESION

4. Moreover, in either case it would probably be better if these statistics were de-emphasized since each concentrates on a feature that is not central to the model.

TEX CIRC-LUGAR

5. While it is often true that the multiple regression estimator maximizes the square of the multiple correlation coefficient, this is quite incidental to the estimates of the model itself and only relevant in some particular types of hypothesis testing.

CIRC - CONCESION

6. The communalities of a factor analysis are not separately maximised by the estimation procedure, but are simply one of its algebraic side effects.

OBJETIVO

<29>

1. It would have been possible to perform the factor analysis on all twentyfour variables.

EVALUACION

2. However, the values of four of these (DISTAN, AIRFRE, DDUMMY and TEMPER) depended on the physical location of the area and were largely determined by latitude.

TEX AFECTADO

3. While it might have been interesting to discover whether factor analysis was able to detect this underlying factor determining these variables, such a test of the effectiveness of the method was not an aim of this paper.

CIRC - CONCESION

4. The variables used in the analysis were therefore limited to the remaining twenty whose values were not a priori expected to be determined by such an obvious underlying factor.

OBJETIVO

<30>

1. We restricted our analysis to five principal components, which explained over 85% of the variance of the original twenty variables.

AGENTE

2. From these were derived the loadings for five factors.

CIRC - PROCEDENCIA

3. These are given in table 3, where each row gives for each variable the loadings for five factors and the communality for that variable.

PORTADOR CIRC - LUGAR

<31>

1. Do the factor loadings shown in table 3 give any clear indication of what the factors themselves measured?

CAUSANTE - COGNITIVO

2. The easiest way to approach this question is to assign each variable to the factor whose loading has the highest absolute value.

IDENTIFICADO

3. This is the factor that contributes most to the explanation of the variance of that particular variable.

IDENTIFICADO

<32>

1. Using this method and taking account of sign, the variables that the first factor had most influence on were: POPSIZ(+), AGRDEP(-) DIVORC(+), POPDEN(+), TELEVI(-), WASHMA(-), DEEPFR(-) and INCOME(+).

CIRC - MEDIO

2. This first factor most probably measured the extent that the area was city urban rather than rural urban.

AGENTE

3. The city urban area had greater population, greater population density, greater income and higher divorce rate.

POSEEDOR

4. The rural urban area was more dependent on agriculture and also had a higher ownership of the consumer durables, televisions, washing machines and deep freezes.

PORTADOR - ADSRIPTIVO

5. While this description of the comparison between the kinds of area seems reasonable, there is one odd feature, namely that while income was higher in the city, ownership of consumer durables was lower there.

CIRC - CONCESION

6. This feature can probably be explained by higher costs of living in cities, taking into account such items as rates, transport and food prices.

OBJETIVO

7. Perhaps also there were greater opportunities to spend income on things other than these consumer durables.

INTERPERS TEX

EXISTENTE

<33>

1. The second factor was of major importance in explaining OUTMIG(+), INMIGR(+), DEATHR(-), BIRTHR(+), ATHIES(+) and MALFEM(+).

PORTADOR - ADSCRIPTIVO

2. The simplest explanation of this factor is that it was a demographic one measuring the concentration of the population of an area in the younger age group.

IDENTIFICADO

3. An area with a high proportion of young workers, is one with relatively high population movement, low deathrate and high birthrate, a higher proportion of males (since females dominate the oldest age group) and a high proportion of atheists.

PORTADOR - ADSCRIPTIVO

<34>

1. The third factor was one of the most successful, in the sense that it was closely identified to the three variables MALEUN, FEMAUN, and MAORIS (all with positive sign), that the other factors had little influence on these three variables and that the communalities for all three were high.

IDENTIFICADO

2. This factor was also very easy to interpret in that it seems clear that it measured the extent that an area contained a Maori community.

PORTADOR - ADSCRIPTIVO

3. With unemployment very low in New Zealand, but higher for the Maoris than for the white population, the factor demonstrated the frequently observed positive relationship between nonwhite population and unemployment levels.

CIRC - CAUSA

<35>

1. The fourth factor explained MANPER(+), and TELEPH(-).

AGENTE

2. Telephone ownership is widespread in New Zealand; of urban areas it is only the industrial centres where the ownership in private dwellings is low.

PORTADOR - ADSCRIPTIVO

3. Thus this factor appears to measure the extent that areas were industrially based.

TEX AGENTE

<36>

1. The final factor explains the ownership of flush toilets With a country as wealthy as New Zealand absence of flush toilets is indicative of a peculiar local circumstance and has nothing to do with the income of the area.

AGENTE

2. Thus it was not surprising that these local circumstances were contained in a factor that had little influence on any other variable.

TEX

INTERPERS

POSEIDO

<37>

1. The factor analysis approach apparently identified five plausible factors which explained a high proportion of the variances of the socio-economic variables.

AGENTE

2. Yet a lingering doubt must remain.

TEX

EXISTENTE

3. Would it not have been possible to attach a reasonable interpretation to a factor whose loadings concentrated on any random subset of the socio-economic variables?

EVALUACION

4. That the five factors that the analysis has thrown up are plausible is comforting, but this plausibility is in no way a statistical test of their validity.

PORTADOR - ADSCRIPTIVO

<38>

1. In the previous section the principal components were obtained merely to summarize the exogenous variables.

TEX

OBJETIVO

2. They were not calculated in exactly the same way as the factors used in this section, being in fact an early stage in the calculation factors.

OBJETIVO

3. A more important distinction still is the completely different classification of the variables.

IDENTIFICADO

4. In the multiple regression model six principal components summarized twenty-three exogenous variables and three of the six determined one endogenous variable.

CIRC - LUGAR

5. The principal components were not variables in their own right.

PORTADOR - ADSCRIPTIVO

6. In the factor analysis model, on the other hand, five factors, which were unobservable exogenous variables, determined twenty endogenous variables.

CIRC -LUGAR

5. DISCRIMINANT ANALYSIS

<39>

1. One means of deriving the multiple regression estimator is as part of the process of obtaining the Best Linear Unbiased Predictor of the endogenous variable model.

PORTADOR - CIRC - PAPEL

2. This use of the word 'predictor' does not coincide exactly with everyday usage, since in the latter it carries connotations of being able to forecast the future.

IDENTIFICADO

3. While it is certainly possible that the value of the endogenous variable in a model is for a period later than that of the exogenous variables, implying that the latter can be used to forecast the future, this situation rarely occurs.

CIRC -CONCESION

4. More often the future values of the exogenous variables have to be known or themselves forecast, before the 'predicted' value of the endogenous variable can be obtained.

INTERPERS

FENOMENO - COGNITIVO

5. On the other hand, if 'prediction' is being attempted using current period exogenous variables, little may be gained by these procedures since it will often be easier to directly measure the actual value of the endogenous variable.

TEX

CIRC - CONDICION

6. Thus while the multiple regression estimator can be derived as a part of a prediction problem, it is usually more informative to obtain it as an optimal 'estimator'.

TEX

CIRC - CONCESION

<40>

1. The discriminant analysis model is more concerned with prediction as an end itself.

PORTADOR - CIRC - TEMATICA

2. In this case, rather than trying to predict the value of a variable for a particular observation, the aim is to predict which one of a small number of populations the observation belongs to.

CIRC - LOCALIZACION

3. Again the use of the word 'predict' does not necessarily have connotations of forecasting the future.

TEX

POSEEDOR

4. More typically the populations are distinguished by some characteristics that are of interest and which may be difficult and/or expensive to measure.

INTERPERS

OBJETIVO

5. The populations may also be distinguished by other variables which may not be of particular interest in themselves.

OBJETIVO

6. The question arises as to whether the values of the latter variables can be used to decide to which population an observation belongs, and therefore enable inferences to be made about its former characteristics.

EXISTENTE (CAUSA)

7. The question may be of interest in itself or alternatively, the procedure may save measuring characteristics which, although of greater importance than the variables, may be impossible or expensive to obtain.

PORTADOR - ADSCRIPTIVO

<41>

1. The following model illustrates this procedure.

AGENTE

2. We assumed it was possible to group New Zealand urban areas into two populations, the comparative 'successes' and the comparative 'failures', basing the distinction on the measured values of certain socio-economic variables.

EXPERIMENTANTE - COGNITIVO

3. The discriminant analysis then examined whether it was possible to use other socio-economic variables, which were neutral in themselves as measures of success or failure, to predict whether an area was in fact a success or a failure.

AGENTE

4. In this use of discriminant analysis, interest focuses on the possibility of using neutral variables in this way.

CIRC -LUGAR

5. There is no suggestion that they are easier to measure than directly success related variables; nor is there any attempt to predict success in the future.

INTERPERS

PORTADOR - ADSCRIPTIVO

<42>

1. The first step in this procedure involved searching the variables for those where there would be general agreement that a higher value implies a higher standard of living.

POSEEDOR

2. This search leads to the six variables FTOILE, TELEVI, TELEPH, WASHMA, DEEPFR and INCOME.

AGENTE

3. The values of two of these FTOILE and TELEPH, were uniformly high; what variations there were could be explained by local phenomena other than differences in standard of living.

PORTADOR - ADSCRIPTIVO

4. They were therefore not used in determining a measure of the standard of living of the areas.

OBJETIVO COMO MEDIO

5. Of the remaining four variables, TELEVI, WASHMA, and DEEPFR, were all positively correlated with each other but negatively with income.

CIRC - TEMATICA

6. This result is at first sight surprising, although it was indicated by the loadings of these variables in the first factor of the factor analysis and was discussed in the preceding section.

PORTADOR - ADSCRIPTIVO

<43>

1. Regardless of the explanation of the negative relationship between income and the other variables, our aim was to order areas by observed standard of living.

CIRC - CONCESION

2. It seemed most sensible to do this by looking at actual ownership of the three consumer durables, rather than using the income series.

EVALUACION

3. Since there was no prior reason for giving more weight to one of these variables over the others as a measure of success, an overall index of success was obtained by taking that linear combination of the three standardized variables with normalized weights which maximized the variance between the areas.

CIRC - CAUSA

4. This linear combination is, of course, the first principal component of the three variables and its value was calculated for each of the twenty-four areas.

IDENTIFICADO

<44>

1. Before proceeding to a description of the results of the discriminant analysis, it is useful to examine the success of this use of the first principal component as a means of ranking the areas.

CIRC - TIEMPO (TEX)

2. Firstly, the variables all entered the principal component with similar weights and with positive sign, implying that the effect of increasing any of these variables, while holding the others constant, would indeed be to increase the success rating of the regions.

TEX AGENTE

3. The principal component makes plausible the prior assumption that these variables were all 'good'.

CAUSANTE - ADSCRIPTIVO

4. Secondly, it is worth noting that the first principle component explained 73% of the variance of the variables; almost three-quarters of the total variance between areas of the three success-related variables was explained by this one index.

TEX INTERPERS AGENTE

<45>

1. The value of the first principal component for the twenty-four areas was at least potentially continuous.

PORTADOR - ADSCRIPTIVO

2. On the other hand it was being used to place the regions into two groups; the successful and the failures.

TEX OBJETIVO COMO MEDIO

3. It was therefore necessary to place a dividing line in the range of values of the component.

EVALUACION

4. In the absence of any clear discontinuity in the series it was decided to place the bar at the mean value, zero.

CIRC - CAUSA

5. This then led to a skewed distribution with fifteen successful areas and nine failures, due to the two or three areas that registered very low values for the component.

CAUSANTE - ADSCRIPTIVO

5. The values for the component and the grouping adopted are given in table 4.

PORTADOR - CIRC - LUGAR (TEX)

6. The table shows that there is no clear geographical pattern of success.

EMISOR

7. Areas that are geographically close together had similar numbers.

POSEEDOR

8. On the other hand, the order of the area numbers in the first and fourth rows of table 4 appears to be random.

TEX PORTADOR - ADSCRIPTIVO

<46>

1. With the areas split into two groups it was then possible to use the remaining neutral variables to try to construct a discriminant function to predict this success related partition.

CIRC - CAUSA

2. The first problem was to determine the variables to enter the discriminant function.

IDENTIFICADO

3. It is clear that using all eighteen available variables to predict the classification of the twenty-four areas would provide no real test of the ability to discriminate, because of the lack of degrees of freedom.

INTERPERS PORTADOR - ADSCRIPTIVO

4. In any case the use of so many variables in determining the grouping would be very clumsy.

TEX PORTADOR - ADSCRIPTIVO

5. Two alternative methods were investigated.

OBJETIVO

6. In the first, six variables were chosen on prior grounds to have as wide a coverage as possible of neutral variables.

CIRC - LUGAR

7. In the second, the computer itself chose those neutral variables that most effectively distinguished between the groups.

CIRC - LUGAR

<47>

1. The variables chosen for the first method were INMIGR, POPSIZ, DISTAN, MALEUN, MANPER and MALFEM.

IDENTIFICADO

2. The discriminant analysis proceeded by selecting the linear combination of these six neutral variables that best separated the two groups of areas.

AGENTE

3. The coefficients of the variables used in the function are given in table 5.

PORTADOR - CIRC - LUGAR (TEX)

<48>

1. The variables were chosen not because it was considered that they would be particularly good at predicting the successes or failures, but rather to be representative of the set of neutral variables.

OBJETIVO

2. As it transpired the null hypothesis that the means for the six variables were the same in each of the two groups could be rejected, but only at the 5% level of significance.

TEX

OBJETIVO

3. The relative inability of these six variables to separate the groups is confirmed by the fact that two of the fifteen areas in the group of successes were wrongly classified and three of the nine failures- an overall error rate of just over 20%.

FENOMENO

<49>

1. The discriminant function is given as function A in table 5, where a positive value of the function for an area placed it in the successful group.

PORTADOR - CIRC - LUGAR (TEX)

2. The function shows that a successful area was essentially one of small population size, with a low inflow of people.

CAUSANTE - COGNITIVO

3. On the other hand it was close to the population node of Auckland, was relatively manufacturing based, and had a high proportion of males.

TEX PORTADOR - CIRC - LUGAR

4. While some parts of this description seem reasonable, this reasonableness should not be thought to give validity to the discriminant function.

CIRC - CONCESION

5. The fact remains that this function made a number of errors.

HOWEVER

AGENTE

<50>

1. Since the arbitrary selection of variables to be included in the discriminant function was not greatly successful, the second approach was indicated.

CIRC - CAUSA

2. Here the computer was programmed to search in a step-wise fashion among the eighteen variables that were not directly related to standard of living, and select in turn those variables that most effectively discriminated between the successes and failures.

CIRC - LUGAR

3. While this procedure is sure to select variables that do more effectively separate the two groups it should be remembered that any such step-wise procedure is statistically dubious.

CIRC - CONCESION

4. It inevitably biases the results towards better discrimination in the sample of areas than could be expected when applying the estimated discriminant functions to areas outside the sample.

AGENTE

5. The purpose of this section is to demonstrate that it is possible to use a few variables to discriminate effectively, rather than to produce functions of great robustness.

O.T. IDENTIFICADO

6. Hence having warned of the general dangers in the procedure we present the results.

O.T. TEX CIRC - TIEMPO (TEX)

<51>

1. Table 5 gives four discriminant functions produced by the step-wise procedure.

EMISOR

2. Functions B and C were the best functions using one and two variables respectively.

IDENTIFICADO

3. In all cases a positive value for an area from a function placed that area in the success group.

CIRC - LUGAR

<52>

1. There is little point in a detailed discussion of these functions.

O.T. EXISTENTE COMO EVALUACION

2. B and C clearly demonstrate the potential of the method.

CAUSANTE - COGNITIVO

3. With very few variables it is possible to 'predict' the original grouping quite efficiently.

CIRC - MEDIO

4. The fact that there is no element of causation involved is demonstrated clearly by the central position of the divorce rate variable.

FENOMENO - PROCESO COGNITIVO

5. One is clearly not suggesting that an area with a low divorce rate is rewarded by a high standard of living, but rather that the more rural urban area, which has higher standard of living, co-incidentally also has a lower divorce rate.

INTERPERS

OBJETIVO

6. The divorce rate happens to be a good indicator of such urban areas.

PORTADOR - ADSCRIPTIVO

7. This relationship was suggested in the first factor of the factor analysis section.

EMITIDO

8. If we follow the reasoning presented earlier, there is some underlying cause, namely the extent that an area is rural urban rather than city urban, that affects both its standard of living and its mores.

CIRC - CONDICION

9. The observed divorce rate implies that the underlying factor has a particular value and the latter then causes the values of the standard of living variables.

CAUSANTE - COGNITIVO

<53>

1. It is worth noting that the single variable DIVORC classified areas as effectively as the combination of six variables in function A.

INTERPERS

AGENTE

2. This demonstrates the advantages of selecting variables to be used in discriminating using specific criteria.

CAUSANTE - COGNITIVO

3. Thus, while as stated earlier, the means of the variables in function A were significantly different in the two groups, this was only just at the 5% level.

TEX

CIRC - CONCESION

4. The variables in the remaining functions, on the other hand, had significantly different means at levels considerably above 1%.

POSEEDOR

<54>

1. As more variables enter the discriminant function, so it is more difficult to interpret the function as a whole.

CIRC - TIEMPO

2. Function E, for example, contains some odd features and does not appear to have been based on any one or two simple socio-economic criteria.

POSEEDOR

3. Given that there is no presumption of causation such a lack of simple interpretation is not disturbing.

CIRC - CAUSA

4. On the other hand these last four functions have demonstrated quite clearly that a few variables can be used to efficiently predict the group that an area belongs to.

TEX

CAUSANTE - PROCESO COGNITIVO

6. CANONICAL CORRELATION

<55>

1. An interesting feature of the use of discriminant analysis in the previous section arose from the employment of continuous values of the first principal components of the three success variables which were used to place the regions into two discrete groups.

EXISTENTE (CAUSA)

2. These groups were then themselves confronted with continuous values of the discriminant functions based on some of the remaining variables.

OBJETIVO

3. This procedure raises the possibility of a direct confrontation of a linear combination of the success variables with a linear combination of the others.

CAUSANTE - EXISTENCIA

4. Pursuing this line of thought, the question becomes: "If we drop the concept of grouping, what is the closest relationship obtainable between linear combinations of the success variables and the remaining variables?"

CIRC - CONDICION

5. It is precisely this kind of question that is answered by the technique of canonical correlation.

T.P. IDENTIFICADO

<56>

1. Canonical correlation obtains linear combinations of two sets of variables that are as close as possible in the sense of having the highest simple correlation coefficient.

AGENTE

2. There is a similarity between this procedure and multiple regression which maximises the simple correlation between the single endogenous variable and a linear combination of the exogenous variables.

EXISTENTE

3. However, this similarity does not carry over to the methodology.

TEX

AGENTE COMO PORTADOR-CIRC-LUGAR

4. Canonical correlation carries no concept of causation; there is no suggestion that one set of variables is causing the values of the other set.

POSEEDOR

5. Further, in the following example, there was no socio-economic model behind the analysis.

TEX

CIRC - LUGAR

6. The question of the closeness of the linear combinations was simply one of fact.

PORTADOR - ADSCRIPTIVO

7. Even given the existence of such a fact it is difficult to interpret, or use, canonical correlation techniques.

CIRC - CONCESION

8. However, it does at least enable a further contrast to be made with the other multivariate techniques discussed so far.

TEX CAUSANTE - PROCESO MATERIAL

9. It also gives a more complete picture of the multivariate tools available to the analyst.

AGENTE

<57>

1. It would be somewhat limiting to pursue the exact question posed at the end of the first paragraph in this section.

EVALUACION

2. In the discriminant analysis the need to ensure that we were measuring success had restricted the the success variables to the three, TELEVI, WASHMA, and DEEPFR.

CIRC - LUGAR

3. To demonstrate the way that canonical correlation obtains linear combinations between sets of variables it would be better to make the sets contain more than three variables.

CIRC - FINALIDAD

4. On the other hand the sets should not be too large, since with only twenty-four observations it is unlikely that the twenty-four variables can contain much linear independence.

TEX PORTADOR - ADSCRIPTIVO

5. Thus any split of the twenty-four variables into two groups will almost certainly lead to the first canonical variables being very highly correlated due to the lack of degrees of freedom.

TEX CAUSANTE - ADSCRIPTIVO

<58>

1. The problem then became one of choosing two sets of variables where each set was distinguished from the other on some socio-economic grounds and where the numbers of variables were both large enough to demonstrate the technique and at the same time small enough to overcome the degrees of freedom difficulty.

PORTADOR - ADSCRIPTIVO

2. The solution chosen was to place in a first group the six consumption related variables, FTOILE, TELEVI, WASHMA, DEEPFR and INCOME and to confront these with the six variables selected in the discriminant analysis to have as high a coverage as possible of the neutral variables.

IDENTIFICADO

3. These were INMIGR, POPSIZ, DISTAN, MALEUN, MANPER and MALFEM.
IDENTIFICADO

4. The results of the analysis on these two groups of six variables are given in table 6.
PORTADOR - CIRC - LUGAR (TEX)

<59>

1. With two sets of six variables it is possible to obtain six pairs of canonical variables, each variable being uncorrelated with all the others, except for its paired variable.
CIRC - MEDIO

2. Further the correlation between each pair is maximized subject to the condition of lack of correlation with the previously calculated variables.
TEX OBJETIVO

3. Thus the correlations decrease in size with each successive pair of variables.
TEX AFECTADO

4. Using an approximate 'X2' test it was not possible to reject at the 5% level of significance that all correlations beyond the first three were zero and for this reason table 6 only presents the coefficients for the first three pairs of variables.
CIRC - MEDIO

<60>

1. It is widely accepted in the literature that the results of canonical correlation analysis are difficult to interpret and this was the case in this study.
INTERPERS PORTADOR - ADSCRIPTIVO

2. According to the first pair of variables an area with a high ownership of washing machines, but a low ownership of deepfreezes was very likely to be one of large population size, large influx of population and low male unemployment.
CIRC - EMISOR

3. While some parts of this description seem reasonable the whole does not fall into any easily preconceived socio-economic pattern.
CIRC - CONCESION

4. In particular it is difficult to envisage an area with high ownership of washing machines but low ownership of deepfreezes, since both intuition and the evidence of the intercorrelation between these variables suggest that they usually move together.
TEX EVALUACION

5. The remaining pairs of variables were as difficult to explain as the first.
PORTADOR - ADSCRIPTIVO

<61>

1. It is perhaps not surprising that little in the way of socio-economic interpretation could be obtained from an examination of the canonical variables.

INTERPERS

OBJETIVO

2. This section commenced with the suggestion that canonical correlation analysis was a natural extension of the discriminant analysis approach.

O.T. EMISOR

3. There too, the economic interpretation was difficult to find, even if it appeared that the tool might be useful.

TEX TEX PORTADOR - ADSCRIPTIVO

UNEMPLOYMENT : GETTING THE QUESTIONS RIGHT

UNEMPLOYMENT: GETTING THE QUESTIONS RIGHT

<1>

1. In my opinion, the form and conception of this conference exemplifies the right instinct for modern macroeconomics.

INTERPERS

AGENTE

2. There is a fact, a big unmistakable unsubtle fact: essentially everywhere in the modern industrial capitalist world, unemployment rates are much higher than they used to be two or three decades ago.

EXISTENTE

3. Why is that?

CIRC - CAUSA

4. If macroeconomics is good for anything, it ought to be able to understand and explain that fact.

CIRC - CONDICION

5. We should be able to produce a fairly convincing analytical account of the occurrences and persistence of unusually high unemployment rates.

AGENTE

<2>

1. You might think that to be a mere commonplace.

INTERPERS PORTADOR - ADSCRIPTIVO

2. To what other sort of end would anyone organize a conference?

CIRC - FINALIDAD

3. My experience, however, is that most high-powered academic conferences are stimulated by purely technical developments, or - less often - by ideological or political promotion, rather than by the need to deal with an outstanding fact.

IDENTIFICADO

4. I do not blame anyone for this state of affairs.

EMISOR COMO AGENTE

5. We may not be blessed with many significant observations too big to be quibbled over.

OBJETIVO COMO POSEEDOR

6. And technical innovations do need to be thrashed out by experts.

TEX

OBJETIVO

7. Anyway, it is good to be faced by a brute fact that needs explanation.

TEX

EVALUACION

8. It is what macroeconomics ought to be about.

IDENTIFICADO

<3>

1. I compliment the organizers also on a second aspect of the agenda: the country-by-country organization of the papers.

EMISOR COMO AGENTE

2. We can all hope to learn something from cross-country comparisons.

EXPERIMENTADOR - AFECTIVO

3. One of the few good ways we have to test analytical ideas is to see whether they can make sense of international differences in outcomes by appealing to international differences in institutional structure and historical environment.

IDENTIFICADO

4. The right place to start is within each country separately, studied by someone who knows the peculiarities of its history and its data.

IDENTIFICADO

<4>

1. You might think that this too ought to be obvious.

INTERPERS PORTADOR ADSRIPTIVO

2. But in fact the usual approach is just the opposite.

TEX TEX IDENTIFICADO

3. More often than not we fail to take institutional differences seriously.

INTERPERS EXPERIMENTADOR - COGNITIVO

4. One model is supposed to apply everywhere and always.

PORTADOR - CIRC - DESTINATARIO

5. Each country is just a point on a cross-section regression, or one among several essentially identical regressions, leaving only grumblers to worry about what is exogenous and what is endogenous, and whether simple parametrizations do justice to real differences in the way the economic mechanism functions in one place or another.

PORTADOR - ADSRIPTIVO

<5>

1. I have no way of knowing whether this organized effort will get anywhere in explaining high unemployment, but it seems to be set up to give itself the best chance.

EXPERIMENTADOR - COGNITIVO

<6>

1. For better or worse, probably for the better, theoretical and empirical work are closely intertwined in macroeconomics.

INTERPERS PORTADOR - ADSRIPTIVO

2. Scratch a macro-theorist and you find a casual econometrician.

PROCESO MATERIAL

3. Scratch a macro-econometrician and you find a casual theorist.
PROCESO MATERIAL

4. Usually you do not have to scratch very hard.
INTERPERS AGENTE

5. Thus, the discussion of the issues central to the conference
has already hardened into certain characteristic forms.
TEX AFECTADO

6. There are questions already lying on the table that the
individual country papers will be trying to answer.
EXISTENTE

7. I suspect that some of these questions are badly or carelessly
posed.
INTERPERS PORTADOR - ADSCSCRIPTIVO

8. Answers to badly posed questions usually have corresponding
problems of their own.
POSEEDOR

<7>

1. Perhaps I had better say what I mean by a badly posed
question:
O.T. INTERPERS EMISOR

2. I mean that it is hard to imagine a plausible theoretical
framework in which the question makes sense, or in which any
answer can sensibly and unambiguously be interpreted.
INTERPERS EVALUACION

3. So I propose to raise and discuss some theoretical issues
suggested by the form that the analytical debate has already
taken.
O.T. TEX EMISOR

<8>

1. For example, if past performance is any sort of a guide, many
of the papers at this conference will be preoccupied with the
relation between real wage rates and employment, and more
particularly with the question of whether unemployment rates in
Europe are currently unusually high mainly because 'real wages
are too high'.
TEX CIRC - CONDICION

2. I want to argue that much of this argument lacks an acceptable
theoretical framework (or makes sense only in a theoretical
framework that many of those who make the argument would not
really wish to accept).
INTERPERS POSEEDOR

3. It is not my intention to prejudge the answer, but rather to
clarify the question.
O.T. IDENTIFICADO

4. To be specific, I want to propose that the useful questions are better phrased in terms of nominal wage behaviour even when the desired answers relate to real wages.

TEX INTERPERS PORTADOR-ADSCRIPTIVO

5. There is no implication here that anyone 'cares' about nominal wage.

INTERPERS TEX EXPERIMENTADOR - AFECTIVO

6. The point is rather the old one that groups of workers and employers cannot bargain over the real wage.

INTERPERS AGENTE

<9>

1. The second issue I want to nominate for discussion is more of an old chestnut and is usually taken as essentially settled in current research and policy analysis.

PORTADOR - ADSCRIPTIVO

2. It has to do with the 'natural rate of unemployment'.

PORTADOR-CIRC-TEMATICA

3. I do not want to question what appears to be a robust finding of recent research on the Phillips curve: that the term that is usually identified as either a forward-looking 'expected rate of inflation' or a backward-looking carrier of 'inertial inflation' enters with a coefficient very near to one.

EXPERIMENTADOR - COGNITIVO

4. I shall not even ask why that was not so during a sample period running from 1950 to the mid-1960s and what one is to make of that fact, if it is a fact.

EMISOR

5. But I do want to suggest that the usual, if casual, interpretation of the 'natural rate' has very little basis either in theory or in data analysis.

TEX INTERERS POSEADOR

6. In a sense, it is not clear what we are talking about when we talk about the natural rate.

TEX EVALUACION

<10>

1. Finally, I want to say a word about the concept of 'involuntary unemployment' because I think that there has been a loss of analytical clarity in recent years.

O.T. TEX EXPERIMENTADOR -AFECTIVO

2. There is no real intellectual difficulty here, only a kind of careless backsliding into vagueness.

EXISTENTE

3. One needs to be reminded only because otherwise the lack of clarity tends to affect other aspects of the ongoing discussion.

RECEPTOR

1. REAL AND NOMINAL WAGES

<11>

1. What does it mean to say that high unemployment is caused by high real wages?

IDENTIFICADO

2. Are not real wage rates and unemployment both endogenous variables in any reasonable picture of a modern capitalist economy?

PORTADOR - ADSCRIPTIVO

3. The father of the contemporary discussion of this question is probably Edmond Malinvaud, and he, characteristically, is completely clear about what is required for this manner of speaking to make analytical sense, and about the possibility that the requirements will not be meant in any concrete instance:

IDENTIFICADO

4. "The subject (i.e. why unemployment may result from inappropriate real wages) would not arise if the evolution—of real wages was strictly determined by the growth process and had no autonomy with respect to other determinants of this process.

EXISTENTE (CAUSA)

5. But some of the questions now raised precisely assume such an autonomy, and I shall take it to exist, even though I easily recognize that the evolution of real wages is mostly induced." Malinvaud, 1982, p.1.

TEX EXPERIMENTADOR - COGNITIVO

<12>

1. When might an analytical observer find it useful to treat an economy's real wage as given?

CIRC - TIEMPO

2. I suppose the simplest case would be that of an economy whose internal prices are largely determined in international markets via a fixed exchange rate and whose nominal wages are imposed on it by a more or less omnipotent trade union movement or perhaps a government agency.

INTERPERS IDENTIFICADO

3. The wage-setting agency has to be more than omnipotent: it has to be in a sense arbitrary.

PORTADOR - ADSCRIPTIVO

4. If there is a structural equation - a sort of 'deep structure' or reaction function - underlying the behaviour of nominal wages, then the real wage is endogenous after all.

CIRC - CONDICION

5. If, for instance, the union or wage board cares about unemployment (has a Phillips curve in its head), then it is no longer meaningful to say whether the real wage causes unemployment or unemployment causes the real wage.

CIRC - CONDICION

6. We have to adopt the right procedure, which is to look for the true exogenous variables.

AGENTE

<13>

1. Another story I have heard tells of a economy in which prices are exogenous and nominal wage rates are tightly and fully indexed.

EMISOR

2. Then the real wage is not only exogenous but more or less constant, except for bias built into the indexing formula.

TEX PORTADOR - ADSCRIPTIVO

3. This may have been the case for some periods in some European economies - Italy for example.

IDENTIFICADO

4. It seems unlikely, however that the real wage will stay constant for ever.

INTERPERS

TEX PORTADOR - ADSCRIPTIVO

5. There must be some endogeneity somewhere, if only through wage drift, and the right strategy is to bring it into the open.

EXISTENTE

<14>

1. There may be other stories that lead to predetermined prices and nominal wages, and therefore to predetermined real wages.

EXISTENTE

2. They all seem pretty special, which is not to deny that they may be true from time to time and place to place.

PORTADOR - ADSCRIPTIVO

3. But I imagine that the general theoretical picture in the minds of most macroeconomists is rather different.

TEX

INTERPERS

PORTADOR - ADSCRIPTIVO

4. Let me try to reconstruct it in static terms, trying not to be so specific as to evoke disagreement on particular points.

TEX

PROCESO LOCUTIVO

<15>

1. Usually both the real wage and the level of employment are endogenous variables.

INTERPERS

PORTADOR - ADSCRIPTIVO

2. A well specified aggregative model will have some exogenous variables as well.

POSEEDOR

3. It will also have an equilibrium concept, perhaps more than one, each appropriate to a particular 'length of run'.

POSEEDOR

4. The model will map each possible configuration of the exogenous variables into an equilibrium configuration of the endogenous variables.

AGENTE

5. If one of the equilibrium conditions of the model says 'Employment (or demand for labour) equals supply of labour', that equation should be omitted or suspended.

CIRC - CONDICION

6. Otherwise the model is not suitable for studying the problem of unemployment, at least not for the length of run under consideration.

TEX PORTADOR - ADSCRIPTIVO

<16>

1. This set-up can be exemplified in terms of the simplest version of the model in the back of everyone's mind.

OBJETIVO

2. Imagine an economy consisting of a fixed number of firms, identical except that each is the sole producer of a slightly differentiated product.

PROCESO COGNITIVO

3. The demand function facing the i th firm is $A(\dots, \dots)D(p_i/p)$.

IDENTIFICADO

4. Here A is an aggregate demand factor.

CIRC-LUGAR

5. It is written as a function of unspecified variables to indicate that it depends on one or more exogenous policy variables, such as tax rates and the money supply.

EMITIDO

6. A may also be a function of some endogenous variables - the real money supply, for example.

PORTADOR - ADSCRIPTIVO

7. The multiplicative form has the symmetric implication that any change in aggregate demand shifts the demand curve facing each firm in the same proportion and isoelastically.

POSEEDOR

8. The fraction of aggregate demand flowing to each firm falls as the ratio of its price to the appropriately defined price index rises.

AFECTADO

9. The demand curves are identical from firm to firm.

PORTADOR - ADSCRIPTIVO

10. In a moment I will make the same assumption about the technology.

O.T. TEX EMISOR

11. Thus, in symmetric equilibrium, each $p_i = p$.

TEX CIRC - TIEMPO

<17>

1. These monopolistically competitive firms set their own prices as profit-maximizers.

AGENTE

2. They are, however, price-takers in the labour market, where they face the common nominal wage w .

PORTADOR - ADSCRIPTIVO

3. All I need from the common technology is a common demand function for labour, denoted $N(w, AD(p_i/p))$.

IDENTIFICADO

4. The wage is inserted as an argument of this function to allow informally for substitution possibilities, so the partial derivatives are negative and positive, respectively.

OBJETIVO

5. I am fudging here about capital and other inputs, but that is only to avoid unnecessary complications.

AGENTE

6. In the standard short-run case, when labour is the only variable input, the demand for labour is $F^{-1}(AD(p_i/p))$, where $y_i = F(N_i)$ is the short-run production function.

CIRC - LUGAR

<18>

1. The i th firm chooses p_i to maximize its profit $p_i AD(p_i/p) - wN(w, AD(p_i/p))$, ignoring of course the effect of its own decision on p .

AGENTE

2. In a symmetric Nash equilibrium in prices, therefore, $(1 - j - 1)/N_i + w/p$, where j is the elasticity of $D(\cdot)$ evaluated at $p_i/p = 1$, taken to be positive and assumed for the usual reason to exceed unity.

CIRC - TIEMPO

3. The employment offered by the representative firm is simply $N(w, AD(1))$.

IDENTIFICADO

4. Obviously there are loose ends to be tied up, but this is enough to make the main point.

INTERPERS EXISTENTE

5. In this model the exogenous variables are the nominal wage and whatever exogenous factors determine the level of aggregate demand.

CIRC - LUGAR

6. There are two equations to determine the endogenous variables: the common price p , and the level of employment N .

EXISTENTE

<19>

1. For a finger exercise, take the case already mentioned, where labour is the only variable input.

CIRC - ROL

2. In addition, specify $A=A(M,p)=M/p$: aggregate demand is given by the quantity theory of money with constant velocity, set equal to one by choice of monetary unit.

TEX PROCESO MATERIAL

3. The two equations of the model become:

$$(1) \quad kF'(N) = w/p$$

and

$$(2) \quad F(N) = (M/p)D(1) = (M/w)(w/p)D(1)$$

where

$$k = 1-j-1.$$

IDENTIFICADO

3. In what follows, I am going to assume that k is more or less constant, or, more precisely, that variations in the elasticity of demand along the demand curve are not so large as to undermine simple qualitative presumptions.

TEX EXPERIMENTADOR - COGNITIVO

4. If they were, that would only strengthen the larger case I am trying to make.

CIRC - CONDICION

<20>

1. Equation (1) defines a negatively sloped curve in the plane of w/p and N .

AGENTE

2. It looks like the 'demand curve for labour'.

PORTADOR - CIRC - COMPARACION

3. It does, in fact, say the wage equals the marginal revenue product of labour.

EMISOR

4. It would be the ordinary demand curve for labour if w and p were exogenous to the representative firm.

IDENTIFICADO

5. Suppose, as in Figure 1, that the economy were at point A, to the left of the vertical corresponding to the supply of labour.

INTERPERS CIRC - COMPARACION

6. It would be tempting to say that unemployment of the amount N_5 - N_0 occurs because the real wage is too high.

INTERPERS

EXISTENTE

7. But the causal statement is fundamentally misleading.

TEX PORTADOR - ADSCRIPTIVO

8. In the model, firms do not 'face' the real wage w/p : they face the nominal wage w , and they choose the real wage by choosing p .

CIRC - LUGAR

9. There is no point in wishing that w/p were at the level corresponding to full employment because w/p is not available for wishing : wishing should be reserved for exogenous variables or for parameters, and, at least in this model, w/p is endogenous.

EVALUACION

<21>

1. The correct way to read the figure is different.

PORTADOR - ADSCRIPTIVO

2. From (1) and (2) it is clear that the two exogenous variables M and w affect the outcome only through the single exogenous factor M/w , the money supply in wage units.

CIRC - PROCEDENCIA

3. Substitution of (1) into (2) yields :

$$(3) \quad kD(1)(M/w) = F(N)/F'(N).$$

AGENTE

3. Thus, N is an increasing function of M/w .

TEX PORTADOR - ADSCRIPTIVO

4. Then (1) says that w/p must be a decreasing function of M/w .

TEX EMISOR

5. In the figure, then, the economy traverses from north-west to south-east along the curve as M/w rises.

CIRC -LUGAR (TEX)

6. The meaningful causal statement is that, at point A, unemployment occurs because the money supply is too low and/or the nominal wage is too high.

INTERPERS

CIRC -LUGAR

7. That is what I meant earlier by the remark that the focus should be on the nominal wage even if the real wage is higher than its full-employment level.

IDENTIFICADO

8. If the nominal wage were lower than it is at A, the price level would be lower too, but not by so much as to keep the real wage from being lower and employment from being higher.

CIRC - CONDICION

9. (Please note : these are statements about 'lower' and 'higher' - 'falling' and 'rising' are a much more complicated dynamic story.)

INTERPERS IDENTIFICADO

<22>

1. It goes without saying that a serious macro-model would add a lot of complications.

INTERPERS

AGENTE

2. I shall mention only some of the more important possibilities.
O.T. EMISOR

3. First of all, the two key simplifying assumptions - that aggregate demand is governed by a childishly simple quantity theory, and that employment is determined uniquely by the level of output - combined to reduce the effective number of exogenous variables to one, the money supply in wage units.

TEX

AGENTE

4. A model of aggregate demand complex enough to interpret the real world would certainly involve a considerably larger number of exogenous variables : fiscal policy variables, open-economy variables, and probably others.

POSEEDOR

5. For example, as soon as there are two variables, the real wage-employment plane is covered by a family of equilibrium loci, each describing how the equilibrium point varies with one of the exogenous factors for prescribed setting of the others.

TEX

CIRC - TIEMPO

6. Questions of policy mix arise, and multiple causation will be the rule.

EXISTENTE (CAUSA)

7. Full employment may be achievable with a range of real wage rates.

PORTADOR - ADSCRIPTIVO

8. Statements about the real wage being 'too high' will have to be qualified still further.

OBJETIVO

<23>

1. A secondary easy finger exercise will clarify the situation.
AGENTE

2. Suppose now that the capital stock is fixed in the short run, but there is another variable factor - imported raw materials, say, whose domestic currency price is constant throughout, and can thus be suppressed.

INTERPERS TEX PORTADOR - ADSCSCRIPTIVO

3. Shephard's Lemma applied to the capital-restricted cost function gives the conditional demand function for labour, $N(w, y)$.

AGENTE

4. Let this have the form $w-ayb$, as for a Cobb-Douglas technology, or a valid local approximation to almost any smooth technology.

POSEEDOR

5. Here y will be replaced by $AD(1)=A$ in symmetric equilibrium; a and b are positive constants and the unit cost curve is locally falling or rising according as $b < 1$ or $b > 1$.

CIRC-LUGAR

<24>

1. For simplicity, if no one will laugh, I hold to the quantity theory specification, $A=M/p=(M/w)(w/p)$.

CIRC - PROPOSITO

2. Then it is easy to solve the model; i.e. write down the mapping from the exogenous variables (M, w) to the endogenous variables $(N, w/p)$:

$$(4) \quad N = (k/b)(M/w)$$

and

$$(5) \quad w/p = (k/b)1/bw(a+b-1)/bM(1-b)/b.$$

TEX EVALUACION

3. Thus the money supply and the nominal wage determine the price of goods and the level of output, and therefore the level of employment and the real wage.

TEX AGENTE

4. Output and employment are no longer uniquely related on account of the second variable factor.

PORTADOR - ADSCRIPTIVO

<25>

1. Now fix M and treat w as a parameter to get the representation:

$$(6) \quad w/p = (k/b)Mb/aN(1-a-b)/b$$

TEX PROCESO MATERIAL

2. Assuming that $a+b \geq 1$, this defines a family of negatively sloped curves in the real-wage-employment plane, as in Figure 2.

CIRC CONDICION

3. Two of the curves are drawn, with $M_1 > M_0$.
OBJETIVO

4. (Changes in the domestic price of raw materials will shift the whole family of curves.)
AGENTE

<26>

1. Suppose that $M = M_0$, and the nominal wage is such as to put the economy at point A.
INTERPERS IDENTIFICADO

2. It is certainly correct to say that a lower nominal wage would lead to a lower real wage and would achieve full employment at B.
INTERPERS CAUSANTE - EXISTENCIA

3. In that sense the real wage is too high.
CIRC-PUNTO DE VISTA

4. It is equally true, however, that full employment is achievable at C with a larger money supply (read: aggregate demand), a higher nominal wage and the same real wage, or even a slightly higher one.
INTERPERS TEX PORTADOR - ADSCRIPTIVO

5. Rational discussion of the choice requires both a more complete and sensible model than the sketch I have used and serious attention to the dynamics of wages, prices and employment.
POSEEDOR

6. It is certainly inadequate, however, just to say that the real wage is too high, as if the real wage were 'everywhere and always' an exogenous variable.
INTER- TEX PERS PORTADOR-ADSCRIPTIVO

<27>

1. Substitution possibilities in production offer still other variations on the basic theme.
AGENTE

2. If persistent under-utilization and unemployment reduces investment and the stock of capital, then an equilibrium locus, like that in the diagram, may shift to the left, lowering the real wage corresponding to full employment.
CIRC - CONDICION

<28>

1. Mention of capital accumulation is a reminder that up until now the discussion has been confined to the short run, with a fixed number of firms.
PORTADOR - ADSCRIPTIVO

2. A short-run equilibrium - a point on (one of) the equilibrium locus (loci) - could yield positive or negative profits for each identical firm.

AGENTE

3. A natural longer-run equilibrium concept could be Chamberlinian : positive or negative profits evoke entry or exit, until the number of firms is such that equilibrium profits are zero.

PORTADOR - ADSCRIPTIVO

4. If firms typically operate along U-shaped cost curves, entry of optimum-sized firms could even be the vehicles by which investment occurs.

CIRC - CONDICION

<29>

1. But then a quite remarkable configuration can easily arise.

TEX TEX EXISTENTE (CAUSA)

2. A long-run equilibrium locus, analogous to the short-run curve in the figure, can turn out to be positively sloped. —

PORTADOR - ADSCRIPTIVO

3. A model along these general lines can be constructed with the following property: with a fixed number of firms, exogenous variations in aggregate demand cause employment and the real wage to move in opposite directions, one rising while the other falls; but variations in aggregate demand sustained long enough for reentry and exit to eliminate profits will trace out a long-run equilibrium locus along which employment and real wages rise and fall together.

OBJETIVO - CREATIVO

4. The underlying idea is that higher aggregate demand induces both an increased number of firms and an increase in the size of each firm.

IDENTIFICADO

5. As firms move down the falling branch of their U-shaped cost curves, with competition eliminating pure profits, the equilibrium real wage can easily rise.

CIRC - TIEMPO

6. That is certainly a powerful blow to simplistic statements about 'classical unemployment'.

PORTADOR - ADSCRIPTIVO

<30>

1. It seems pretty clear that this sort of model could be adapted to describe an open economy in which the domestic market is shared by foreign and domestic firms.

INTERPERS

OBJETIVO

2. That will make it more likely that higher real wages- or, better still, relative wages- will be associated with domestic unemployment.

CAUSANTE - ADSCRIPTIVO

3. But the range of exogenous variables driving the real or relative wage will be correspondingly enlarged.

TEX

AFECTADO

<31>

1. My object in this section was not a particular explanation of the recent shift to higher unemployment rates.

O.T. IDENTIFICADO

2. But I hope to have made a case that one of the currently popular ways of asking and answering the question is improperly formulated and therefore unlikely to lead to clear thinking.

O.T. TEX EXPERIMENTADOR - AFECTIVO

3. The proper strategy is to focus on the exogenous variables (and of course on the equilibrium conditions themselves).

IDENTIFICADO

4. Whatever one may believe about the nominal wage, the real wage is unlikely to be exogenous, except under special circumstances.

CIRC -CONDICION

2 THE NATURAL RATE OF UNEMPLOYMENT

<32>

1. Milton Friedman, it will be remembered, originally defined the 'natural rate of unemployment' as the unemployment rate 'ground out by the Walrasian equations', or words to that effect.

EMISOR COMO AGENTE

2. The concept, or a concept going under that name, has become firmly established in the literature.

AFECTADO

3. But I doubt that many of those who use the concept would accept Friedman's definition, or would imagine econometric estimates of the 'natural rate' to be estimates of a component of Walrasian equilibrium, or would regard the Walrasian model as a valid representation of anything that a macroeconomist would be much interested in.

TEX INTERPERS

EXPERIMENTADOR - COGNITIVO

<33>

1. In practical terms, the 'natural rate' these days figures in two ways.

CIRC-PUNTO DE VISTA

2. It might appear as a NAIRU, an unemployment rate below which the economy can not stay without accelerating inflation.

PORTADOR CIRC - ROL

3. Or - in models that contain an 'expected inflation' or 'inertial inflation' term on the right-hand side with a coefficient of unity - it occurs as the unemployment rate compatible with a rate of inflation that does not deviate from the expected or inertial rate.

TEX

CIRC - LUGAR

4. This shift of meaning is important because it diminishes the temptation to ascribe optimality properties to the natural rate as one might automatically do with a Walrasian concept.

PORTADOR ADSCRIPTIVO

<34>

1. There is a minor ambiguity about the first - the NAIRU - definition.

EXISTENTE

2. It is compatible with the idea of a long-run Phillips curve that slopes downward everywhere, but has a vertical asymptote at the left, at a positive unemployment rate, precisely the NAIRU.

PORTADOR - ADSCRIPTIVO

3. The second definition, however, insists on a vertical long-run Phillips curve, and defines the long run to be a state in which the actual and expected (or inertial) inflation rates are equal.

EMISOR COMO POSEEDOR

<35>

1. In recent years the vertical Phillips curve interpretation of the natural rate has come to dominate the literature.

CIRC - TIEMPO

2. There seem to be two reasons for this.

EXISTENTE

3. First, econometric Phillips curves estimated from post-1965 sample periods routinely produce near-unit coefficients on the expectational or inertial variable, so the empirical basis is there.

TEX

AGENTE

4. The second reason is purely theoretical: if we imagine two otherwise identical economies, fully adjusted to different rates of inflation (and money supply growth, say), we see no reason for them to have different real outcomes.

PORTADOR - ADSCRIPTIVO

5. This is why, way back in 1969, I described the vertical long-run Phillips curve story as 'hard not to believe'.

IDENTIFICADO

6. It does, however, put quite a lot of strain on the notion of 'fully adjusted'.

AGENTE COMO CAUSANTE - ADSCRIPTIVO

<36>

1. This version of the natural rate of unemployment also has one very uncomfortable implication that seems not to have been directly faced in the literature.

POSEEDOR

2. Later on, in another connection, I am going to refer to some recent estimates of the natural rate in several OECD countries.
O.T. CIRC LUGAR (TEX)

3. One of these puts the current natural rate at 8.0 per cent in the Federal Republic of Germany and at 2.4 per cent in Austria.
EMISOR

4. One might be prepared to agree that there would eventually be accelerating inflation in Germany if the unemployment rate were held below 8.0 per cent for a long time, and in Austria if the unemployment rate were held below 2.4 per cent for a long time.
EXPERIMENTADOR - COGNITIVO

5. Would anyone, however, accept the symmetrical proposition: that there would eventually be accelerating deflation in Germany if the unemployment rate were above 8.0 per cent for a long time, and in Austria if the unemployment rate were to exceed 2.4 per cent for a long time?
EXPERIMENTADOR - COGNITIVO

6. Somehow one doubts it.
CIRC- MANERA

7. Yet that is an implication of the whole apparatus.
TEX PORTADOR - ADSCRIPITIVO

<37>

1. The easy dodge will not work.
AGENTE

2. One is tempted to say, Oh, well, so the natural rate is a bit fuzzy, an interval rather than a point, and there is a band in which the Phillips curve slopes down, even in the long run.
EXPERIMENTADOR - AFECTIVO

3. The trouble is that, if the band is very narrow, the discomfort remains: would one believe that Austria would have accelerating deflation if the unemployment rate were sustained at 2.6 per cent?
IDENTIFICADO

4. If the band is fairly wide, however, then, in effect, the long-run Phillips curve is not vertical and one can talk about trade-offs within that 'fairly wide' zone.
CIRC - CONDICION

<38>

1. If there is a natural rate of unemployment, then it is clearly important for policy purposes to know what it is.

CIRC - CONDICION

2. It would make a lot of difference to policy whether the high unemployment rates we are here to discuss occur because the natural rate is very high or because current unemployment is far above the natural rate.

PROCESO MATERIAL

3. Of course, there are estimates of the natural rate, and this conference will undoubtedly produce more.

INTERPERS

EXISTENTE

<39>

1. Estimates of the natural rate in the NAIRU tradition tend to emphasize changes in the composition of the labour force by demographic or skill category, obstacles to mobility, the size of unemployment insurance benefits, and such factors.

AGENTE

2. In the vertical Phillips curve tradition, however, the estimated natural rate arises from the Phillips curve itself if the coefficient on the inertial-expectational variable is unity: one simply equates the current and expected inflation rates and solves for the implied natural rate of unemployment (which will then be a function of any other right-hand side variables).

CIRC - PUNTO DE VISTA

3. That is nowadays the common procedure.

PORTADOR ADSCRIPTIVO

<40>

1. A mild paradox arises here.

EXISTENTE (CAUSA)

2. Those who estimate the natural rate in this way occasionally go on to discuss events or policies that might possibly change the natural rate.

EMISOR

3. When they do, they normally talk about the factors I mentioned earlier as figuring in the NAIRU tradition.

CIRC - TIEMPO

4. But those factors have played no role in the estimation.

TEX

AGENTE

5. It seems like rather a bold leap, calling for more justification than it gets.

PORTADOR - ADSCRIPTIVO

6. One can always define the unemployment rate to be below the natural rate whenever inflation is accelerating.

EMISOR COMO AGENTE

7. But then it is vacuous to say that inflation is accelerating
because unemployment is below the natural rate.
TEX TEX INTERPERS AGENTE

<41>
1. The main point I want to make about estimates of the natural rate is rather different.
PORTADOR - ADSCRIPTIVO

2. For concreteness I turn to a recent Working Paper of the OECD Economics and Statistics Department (Coe & Gagliardi, 1985).
O.T. CIRC - PROPOSITO

3. I emphasize that I am not being critical of this paper, which seems to be an excellent and exceptionally thoughtful example of the genre: it is the genre I want to question.
INTERPERS AGENTE

<42>
1. The paper produces vertical Phillips curve estimates of the natural rate for nine or ten countries, and for three or four sub-intervals of the period since 1961 or 1967.
AGENTE

2. Their Phillips curves are not really vertical because changes in unit labour costs need not be passed one-for-one into changes in prices, with changes in import costs accounting for the difference.
PORTADOR - ADSCRIPTIVO

3. But the numbers seem to allow the point I want to make.
TEX AGENTE

4. As already mentioned, the current (early 1980s) natural rates range from 2.3 and 2.4 per cent in Japan and Austria to 8.0 per cent in Germany and 9.0 per cent in France.
TEX AGENTE COMO IDENTIFICADO

5. (Surprisingly, I guess, the estimate for the UK which was 7.3 per cent in 1976-80, falls to 5.9 per cent in 1981-83; but there is a variant, with a different treatment of import prices, that gives a figure of 9.6 per cent for 1981-83.
INTERPERS INTERPERS AGENTE COMO IDENTIFICADO

6. The alternative treatment of import prices gives more sensible-looking results for the United States too, but my argument does not depend on such details.
AGENTE

7. Coe and Gagliardi are, however, calling attention to a neglected aspect of the NAIRU in an open economy.)
AGENTE

<43>

1. The country papers at this conference will very likely emerge with estimates of the natural rate that vary widely from place to place.

AGENTE COMO POSEEDOR

2. Can we rationalize those differences in terms of labour market institutions and other factors in a convincing way?

AGENTE

3. It is hardly enough to allow that there are unspecified 'differences' between countries : the differences have to be quantitatively adequate to the task.

INTERPERS

EXISTENTE

<44>

1. It is even more striking that the estimated natural rates within countries vary widely from sub-period to sub-period.

INTERPERS

PORTADOR - ADSCRIPTIVO

2. The estimate for Germany goes from 1.6 to 8.0 per cent in ten years; that for France goes from 3.3 to 9.0 per cent in five years; that for the UK, from 2.6 to 7.2 per cent between 1967-70 and 1971-75.

AGENTE COMO IDENTIFICADO

3. Can those dramatic changes be rationalized in a satisfactory way?

OBJETIVO

<45>

1. Coe and Gagliardi take note of the possibility that the apparent 'natural rate' may be closely related to observed past rates of unemployment.

EXPERIMENTADOR - COGNITIVO

2. They perform an interesting experiment; but my interpretation of the outcome is utterly different from theirs.

AGENTE

3. They enter the unemployment rate in the Phillips curve as a deviation from its own four-year (occasionally eight-year) moving average.

AGENTE

4. Here is their summary:

O.T. CIRC LUGAR (TEX)

5. "In the case of Australia the improvement relative to the equation with just the unemployment rate is dramatic.

CIRC - TEMATICA

6. As well as improving the explanatory power of the equation, the coefficient estimates on both the activity variable and the inflation rate become significantly different from zero, and the coefficient on the inflation term corresponds more closely to a priori beliefs.

CIRC -ADITIVO

7. For the United Kingdom there is a marginal improvement in the equation.

CIRC -TEMATICA

8. For the other countries, incorporating a natural rate specified in this way makes little difference to the estimation results and hence the more straightforward specification... is maintained." (Coe & Gagliardi,1985)

CIRC -TEMATICA

<46>

1. I take this as saying that the data do not prefer the conventional, natural rate, specification to the one that looks at lagged unemployment rates.

INTERPERS EXPERIMENTADOR-AFECTIVO COMO OBJETIVO

2. But the implications of those two alternative hypotheses differ radically.

TEX PORTADOR - ADSCRIPTIVO

3. The lag interpretation says that there is yet another way to bring down the currently effective 'natural rate': just have low unemployment for a while.

EMISOR

4. That would seem to be front page-news.

PORTADOR - ADSCRIPTIVO

5. It is hardly a natural-rate story at all.

PORTADOR -ADSCRIPTIVO

<47>

1. The proper conclusion is not that the vertical long-run Phillips curve version of the natural-rate hypothesis is wrong.

IDENTIFICADO

2. I would suggest instead that the empirical basis for that story is at best flimsy.

INTERPERS TEX PORTADOR - ADSCRIPTIVO

3. A natural rate that hops around from one triennium to another under the influence of unspecified forces, including past unemployment rates, is not 'natural' at all.

PORTADOR - ADSCRIPTIVO

4. 'Epiphenomenal' would be a better adjective; look it up.

PORTADOR - ADSCRIPTIVO

INVOLUNTARY UNEMPLOYMENT

<48>

1. A year or two ago I had a memorable conversation with a few of my teaching colleagues in macroeconomics.

CIRC-TIEMPO

2. We are discussing the coverage of the course we teach together: what must all of our graduate students, whatever their specialities, know about macroeconomics?

EMISOR

3. I offered the (casual) opinion that we could leave out any treatment of the supply of labour, on the grounds that one can assume the supply of labour to be inelastically given and constant in the short to medium run without losing anything of significance to macroeconomics.

EMISOR

4. One of my colleagues objected that that was impossible.

EMISOR

5. I asked why.

EMISOR

6. Because then one could not explain fluctuations in employment.

TEX TEX AGENTE

7. I explained that I thought employment could be a lot smaller than the supply of labour.

EMISOR

8. The look I got in return could have signified amusement, disbelief, pity and - maybe? - the dawning of a new idea, in unknown proportions.

EMISOR

9. I would rather not know.

EXPERIMENTADOR - AFECTIVO

<49>

1. Someone once defined an economist as a parrot trained to repeat 'Supply and demand, supply and demand'.

EMISOR COMO AGENTE

2. There are many worse things you could teach a parrot to say - and we hear them every day - but I want to suggest that, in the case of the labour market, our preoccupation with price-mediated market-clearing as the 'natural' equilibrium condition may be a serious error.

EXISTENTE

<50>

1. For example, it is often argued that individual unemployed workers could accept lower-skill, lower-paid jobs than they are used to, because such jobs are usually available.

TEX

INTERPERS

AGENTE

2. Since they do not do so, their 'unemployment' should be regarded as 'voluntary'.

CIRC - CAUSA

3. (I think I once pointed out that, by this standard, all the American soldiers who were killed in Vietnam, could be counted as suicides since they could have deserted, emigrated to Canada or shot themselves in the foot, but did not.)

INTERPERS

CIRC-PUNTO DE VISTA

4. The key point here is that the notion of 'involuntary unemployment' is not metaphysical or psychological; it has little or nothing to do with free will.

IDENTIFICADO

5. From the economist's point of view, there is involuntary unemployment whenever, for any substantial number of workers, the marginal (consumption) value of leisure is less than the going real wage in occupations for which they are qualified.

CIRC - PUNTO DE VISTA

6. That definition covers underemployment as well as total unemployment, and it covers both the skilled mechanic who does not take work as a sweeper and the one who does.

POSEEDOR

7. It has empirical content.

POSEEDOR

<51>

1. There is a valid and important question of why workers who are involuntarily unemployed do not actively bid for jobs by nominal wage-cutting.

EXISTENTE

2. It is an equally interesting observation that employers do not usually encourage such behaviour.

INTERPERS

AGENTE

3. Economic theory is not without useful answers to that question: there are asymmetric information theories, efficiency-wage theories, relative-wage theories, bargaining theories, fairness theories, insider-outsider theories.

POSEEDOR

4. Research has come to no firm conclusion yet; and the problem of empirical discrimination has not even been touched.

AGENTE

5. International comparison may play an important part here.
AGENTE COMO PORTADOR-ADSCRIPTIVO

<52>

1. An interesting and useful solution to that riddle will almost certainly involve an equilibrium concept broader, or at least different from, price-mediated market-clearing.

POSEEDOR

2. (I say 'almost' to allow for the possibility that slowly self-correcting disequilibrium may turn out to be a better idea.)

EMISOR COMO AGENTE

3. That will mean taking seriously the problem of modelling the strategy sets actually seen by firms and workers as available to them, and their criteria of choice.

POSEEDOR

4. In neither respect, it seems to me, has economic theory yet done justice to the institutional and affective complexity of the labour market.

CIRC - TEMATICA

5. The conventional assumptions seem particularly implausible and unappealing there.

PORTADOR - ADSCRIPTIVO

<53>

1. Once one starts down that line, other interesting possibilities open up.

CIRC - TIEMPO

2. We are all used to the idea that non-cooperative games can have inefficient equilibrium points.

PORTADOR COMO EXPERIMENTADOR - COGNITIVO

3. The example of Nash equilibrium, has, of course, been studied in detail.

OBJETIVO

4. In such cases it is natural to ask if there are better allocations that are cooperatively attainable, and what mechanisms could most effectively achieve them.

CIRC-LUGAR

5. This is what the theory of economic policy is presumably about.

IDENTIFICADO

6. I do not think it will prove useful simply to turn macroeconomics into game theory; but I think it will be useful to incorporate some game-theoretic habits of thought into the way we do macroeconomic theory.

INTERPERS

EVALUACION

7. Keynes's idea that anything that could be accomplished by wage deflation could be accomplished more quickly and less stressfully by monetary expansion is, right or wrong, an example of the sort of thing that needs to be done, a bit more formally and on a broader front.

PORTADOR - ADSCRIPTIVO

THE SPANISH CORRELATIVES OF COMPARISON
AND SENTENCE RECURSION

THE SPANISH CORRELATIVES OF COMPARISON
AND SENTENCE RECURSION

<1>

1. The property of recursion through successive repetitions of sentences within sentences must surely stand among the most widely realized characteristics of natural languages.

PORTADOR - CIRC - LUGAR

2. It is one, moreover, whose considerable power linguistic theory has understandably tried to constrain as narrowly as possible into the three processes of coordination, relativization and complementation.

PORTADOR - ADSCRIPTIVO

<2>

1. In years past there have been both explicit and implicit claims that comparative formation embodies yet a fourth process of sentence recursion.

CIRC - TIEMPO

2. For comparative structures, however, Chomsky(1976) has suggested an analysis that would preclude the assumption of a fourth process.

CIRC - DESTINATARIO

<3>

1. On this matter the data of English is often frustratingly opaque and a decisive answer to the dilemma is difficult to provide.

CIRC - TEMATICA

2. There are, however, certain structures of the comparison of equality provided in Spanish and Latin, and to a lesser extent in certain other Romance languages, where the relating morphemes are so marked as to provide a clearer mapping of the derivation of the structure.

EXISTENTE

3. It is on some of these structures that this study focusses, since I suggest they hold evidence that is of considerable relevance to the problem.

CIRC - LUGAR COMO TEMATICA

4. Indeed it will be argued here that none of the three established sentence recursive processes is capable of defining 'correlative conjoining' and hence a further process must be recognized.

TEX

INTERPERS

PORTADOR - ADSCRIPTIVO

<4>

1. It is as well to consider at the outset certain objections that might be made that these structures are literary and have ceased to belong to many dialects and registers of speech.

EVALUACION

2. This difficulty is readily admitted.
EMITIDO

3. It is a difficulty also experienced by the scholar working on any historical phenomenon, be it a classical language or old or middle English.
PORTADOR - ADSCRIPTIVO

4. Nonetheless, many insights into contemporary processes have been gathered by evidence far further removed from present-day speech.
TEX OBJETIVO

5. My purpose is not to map the prevailing domains of the contemporary language, but to avail myself of whatever evidence there is to postulate what is possible within the limits of Universal Grammar.
O.T. IDENTIFICADO

6. I shall argue on this evidence that at some stage Spanish contained a recursive process which is indefinable by any of the three established devices.
INTERPERS CIRC - CAUSA

7. If correct, this conclusion has implications both in terms of recursion in general and also for the analysis of comparison in particular, since it provides evidence that universal grammar contains a fourth device, one therefore potentially available to all languages.
CIRC - CONDICION

8. It does not, of course, establish that any particular language than the one from which the evidence is taken, avails itself of this device.
EMISOR

<5>

1. The data over which we shall be elaborating our argument is made up of those correlative structures which are characterized by the co-occurrence of the members of one of the two pairs of correlative words, tal...cual; and tanto...cuanto.
IDENTIFICADO

2. The first member of each of the pairs occurs generally in the left hand clause in our data, and will be referred to as the 'antecedent' (tal ...tanto).
PORTADOR - CIRC - LUGAR

3. The second member appears in the right hand clause and will be referred to as the 'relator' word (i.e. cual, cuanto).
PORTADOR - CIRC - LUGAR

4. Where possible the sentences are taken from authoritative works and the authors's name is included in brackets afterwards.
CIRC - LUGAR

5. In other cases I have relied on the judgements of native informants.

CIRC - LUGAR

<6>

1. In the course of this investigation of the established recursive processes as devices for accounting for the data, we shall have cause to consider other syntactic properties of correlative structures.

O.T. CIRC - TIEMPO

2. Reference will, in particular and repeatedly, be made to the following properties, which it will be convenient to factor out at the beginning.

O.T. EMITIDO

Correlatives involve WH-movement

<7>

1. Correlatives clearly involve wh-movement, noticeable particularly in the fact that the relator words cuál and cuanto bear the usual marking of wh-word in Spanish (i.e. initial /k/ and are associated with a constituent gap in the part of the sentence from which they may be considered to have been removed.

POSEEDOR

2. Thus although there is a grammatical sentence (9), this sentence cannot be embedded after cuanto (10):

TEX CIRC - CONCESIVA

3. In other words, this is a case of the 't'-gap, associated with the trace 't' of the element that has been removed.

TEX PORTADOR - ADSCRIPTIVO

Correlative words are adjectives

<8>

1. The notion 'to be an adjective' is defined in terms of transformational grammar as the lexeme dominated by the node 'adjective'.

IDENTIFICADO

2. This means that from the heuristic point of view an adjective is most readily discovered by distributional criteria, if it occurs where the rules of the grammar permit the category adjective.

IDENTIFICADO

3. Formal properties provide additional criteria, particularly when they signal that an item has undergone the morphological rules predicted by the grammar for the category concerned.

POSEEDOR

<9>

1. The most significant properties of the correlative words being considered is that of the marking for number (and gender in the case of the tan(to) cuanto pair).

IDENTIFICADO

2. By collating distributional and formal properties it is possible to arrive at an unequivocal decision as to the categorical status of these words.

CIRC - MEDIO

3. Initially, let us note that the properties of markings for number and gender are linked to three categories besides that of adjective, namely those for nominal and determiner.

TEX

INTERPERS

PORTADOR - ADSCRIPTIVO

4. We may now turn to their distributional properties in order to identify which of the three the correlative words are.

O.T. EXPERIMENTANTE - COGNITIVO

<10>

1. There is clear evidence that the correlative words are not nouns provided by sentences such as (1).

INTERPERS

PORTADOR - ADSCRIPTIVO

2. Here, in the expression cuantas estrellas (as many stars) cuantas is patently the modifier of estrellas with which it shows concord for number and gender.

CIRC - LUGAR

<11>

1. It is true that nominals may also be the modifiers of other nominals but when this occurs there is generally no obligatory concord.

INTERPERS

PORTADOR - ADSCRIPTIVO

2. Thus we may have, typically sentences in the form of (11) and (12) exemplifying predicate and attributive modification of a noun by a noun but without concord.

TEX

INTERPERS

EXISTENTE

3. In other words, the criteria of distribution and inflection converge in the conclusion that no unified analysis of correlative phenomena can be provided under the assumption that correlative words are nouns.

TEX

PORTADOR - CIRC - LUGAR

<12>

1. It is only slightly more problematic to demonstrate that these words are not determiners.

EVALUACION

2. For the purposes of this paper it is not of great importance if they are so considered.

CIRC - FIN

3. However, there is a fair amount of evidence against the determiner assumption.
TEX EXISTENTE

4. Consider, for example, that the determiner is a category which is only introduced as an expansion of NP, its occurrence is limited therefore to NP slots.
INTERPERS TEX PORTADOR - ADSCRIPTIVO

5. It has been shown, however, that correlative words are to be found in positions with a function that is uncharacteristic of nominals.
INTERPERS TEX PORTADOR - CIRC - LUGAR

6. Thus they modify verbs as in example (6) and other adjectives as in (7) and (8).
TEX AGENTE

7. In the case of the 'qualitative' correlatives tal and cual, they, like all such adjectives, may occur as the predicate of estar and similar verbs whose subcategorization is such that they may not occur with nominal predicates.
CIRC - TEMATICA

8. It is an important consequence of the theory of transformational grammar that all lexemes belong to one of the independently motivated lexical categories which constitute part of the finite vocabulary of the phrase structure rules.
IDENTIFICADO

9. Thus, for any particular unanalysed phenomenon it would be highly suspicious to propose that a new lexical category be added to this vocabulary.
TEX CIRC - TEMATICA

10. In the case of correlative words (although they are not without their idiosyncrasies) it is more natural to assume, that they belong to some already established lexical category.
CIRC - TEMATICA

11. Using distributional and formal criteria, I have attempted to show, that these words are most naturally analysed as adjectives.
CIRC - MEDIO

Antecedent movement

<13>

1. The antecedent words tal and tanto are relatively mobile within the upper sentence, a property which we shall refer to as the antecedent movement.
PORTADOR - ADSCRIPTIVO



<16>

1. We may summarize our intent so far by indicating that correlative structures have been shown to reveal certain syntactic properties:

- (a) correlative sentences involve wh-fronting;
- (b) correlative words are adjectives;
- (c) they may undergo antecedent movement;
- (d) nouns modified by correlative words are pied-piped along with their correlative;
- (e) correlation is subject to the identical function constraint.

O.T. EMISOR

2. We shall compare the established recursion processes with our own correlative conjoining hypothesis principally on these and other syntactic facts and their capacity for accounting for them.
O.T. AGENTE

Coordination

<17>

1. The first possibility to be considered is whether coordination might not provide an adequate account of correlative conjoining.

O.T. IDENTIFICADO

2. Let us be clear as to what might constitute evidence in favour of this possibility.

O.T. PROCESO COGNITIVO

<18>

1. Coordination implies the conjoining of two equal structures in a relationship in which neither is subordinated to the other, and generally throughout the interposition of a conjunction word that is independent of both of the conjoined elements.

IDENTIFICADO

2. Since it would be sentential coordination that would be relevant to correlative conjoining, the structure implied by a coordination hypothesis is that of (17)

CIRC - CAUSA

<19>

1. The problem of such an analysis for correlative structures is, in the first place, to locate a conjunction.

IDENTIFICADO

2. Again, only the correlative relator words can, with any feasibility, be so considered.

TEX

PORTADOR - ADSCRIPTIVO

3. However, on several counts they reveal properties quite alien to conjunction, an, for example, the marking for person and number, in concord often with a nominal in the sentence, and other adjectival properties; the overt sister relationship between the relator words and another lexeme of the embedded sentence observed in the case of (1) where the nominal estrellas has been pied-piped along with the relator cuantas; the fact that all correlative words are constituents of the left-hand sentence in the case of the antecedents and the right-hand sentence in the case of the relator words.

TEX CIRC - CAUSA

<20>

1. It is, moreover, clear that the correlative clauses are embedded clauses and cannot, therefore, be instances of coordination.

TEX INTERPERS PORTADOR - ADSCRIPTIVO

2. Perhaps the best criterion of this are the movement constraints discovered by Emonds (1970).

INTERPERS IDENTIFICADO

3. Thus it has been remarked that the two correlative words, the antecedents tal and tanto have a certain freedom of movement with the left-hand clause; the relator words cual and cuanto on the other hand are fixed immutably in the left-most position of the right-hand sentence.

TEX INTERPERS POSEEDOR

4. If these sentences were a case of coordination this difference in behaviour would be extremely difficult to account for.

CIRC - CONDICION

5. Under Emond's description of root and structure preserving rules it follows naturally from the assumption ~~that the left hand clause is a root S, allowing comparatively free movement of constituents.~~

CIRC - PUNTO DE VISTA

6. The right-hand one is an embedded sentence, in which movement is severely constrained.

PORTADOR - ADSCRIPTIVO

<21>

1. These two properties constitute convincing evidence that correlative structures are not cases of coordination but that the right-hand clause is clearly a subordinate of the left.

IDENTIFICADO

Relativization

<22>

1. Relativization must be considered as providing the most immediately appealing account for correlative conjoining.

IDENTIFICADO

2. It is straightaway noticeable that relative structures possess marked similarities with correlative structures: the relators in both cases are wh-marked words being often marked for gender and number as are some relative pronouns.

INTERPERS POSEEDOR

3. They reveal the same sort of identity constraint between lexemes in upper and lower sentences.

POSEEDOR

4. The relator words like relative pronouns are clearly constituents of the embedded sentence which have been fronted to complementizer position.

PORTADOR - ADSCRIPTIVO

5. The matter, therefore, demands careful consideration.

POSEEDOR

<23>

1. In essence the question is really one of the appropriateness of a structure such as (18) as an analysis of the facts of correlative structures.

TEX PORTADOR - ADSCRIPTIVO

2. It is clear, then, that to maintain a relative clause analysis it is necessary to show that in correlative structures

- (a) the whole correlative structure is a NP;
- (b) each of the correlative words are dominated by NP;
- (c) other conditions of relativization are met.

INTERPERS TEX CIRC - FIN

3. I shall argue that on all of these scores there is evidence against the analysis.

O.T. EMISOR

4. (1) Consider the question of whether the whole correlative structure is a NP.

INTERPERS PORTADOR - ADSCRIPTIVO

5. There are certain cases in which they are, as for example, in (1) where the substructure (19) is clearly the NP direct object of the verb daré 'I shall give'.

EXISTENTE

<24>

1. But, of course, this is a consequence of the fact that correlative words are adjectives and therefore a possible expansion of the node NP.

TEX INTERPERS PORTADOR - ADSCRIPTIVO

2. There are other contexts, however, which permit an adjectival phrase but exclude a NP: such are the functions of verbal qualifiers (manner and degree), adjectival modifier (degree) - cases which are exemplified by these may occur (as a predicate) after verbs such as *estar* which are not compatible with a NP predicate.

EXISTENTE

3.(2) Not only is the entire construction not necessarily a NP, it is also the case that the correlative words themselves are not nouns of NPs, as was discussed at length in section 2.

TEX

PORTADOR - ADSCRIPTIVO

4.(3) Even in those contexts where the correlative structures are dominated by NP their structure and function is often different from that of the relative structure.

CIRC - LUGAR

5. In the latter the entire embedded NP is converted in to a single lexical unit, the relative pronoun, and retains semantically the original syntact function, be that one of subject, direct object or prepositional object.

CIRC - LUGAR

6. The correlative relator, on the other hand, is clearly often only a part of the NP and frequently the remainder of the lexemes of its NP are extant in surface structure, as, for example, we find in (1) and (2) which, as has been discussed, are clear-cut cases of pied-piping.

PORTADOR - ADSCRIPTIVO

7. In these cases its function is not that of a NP but merely that of a modifier of the noun of the NP, a function completely alien to the relative pronoun.

CIRC - LUGAR

8.(4) Another important property that differentiates correlative structures from relative clauses is the functional identity requirement.

IDENTIFICADO

9. The latter appears to require only that the noun in the embedded sentence to be relativized be identical with the noun in the upper sentence; there are no conditions to the effect that they be in identical structural or functional position.

POSEEDOR COMO IDENTIFICADO

10. As has been already observed (section 2) with correlative clauses, there appears to be a very rigorous constraint on functional identity.

CIRC - COMPARACION

11.(5) Yet further evidence that correlative clauses are not relative clauses can be found in their transformational behaviour, and in particular in their permutation potential.

PORTADOR - CIRC - LUGAR

<25>

1. One characteristic of relative clauses in Spanish is that the relative clause may not separate from its antecedent.

IDENTIFICADO

2. Correlative conjoining, however, as we have noted, permits such a separation with comparative freedom, as is the case here in example (14).

AGENTE

<26>

1. Five important criterial properties have been considered where correlative structures differ from relativization : (a) the constructions do not necessarily function as NPs, (b) the correlative words are not nominal, (c) even when NPs they function differently from relative clauses, (d) they are subject to an identical function constraint that does not apply to relative clauses, (e) antecedent and relator words can be separated in correlative structures but not in relative clauses.

O.T. FENOMENO - COGNICION

2. In sum, to claim, despite the above, that correlative structures are a type of relativization is tantamount to depriving this pattern of all meaning.

TEX PROCESO LOCUTIVO

Complementation

<27>

1. Complementation is possibly the least well defined of all the processes we are considering.

IDENTIFICADO

2. In consequence, it is the most difficult to establish or to disconfirm.

TEX IDENTIFICADO

3. In most analyses it seems to be agreed (a) that complements are dominated by the node NP and function as NPs, and (b) that there is usually an overt marker, the 'complementizer' which introduces the clause.

CIRC - LUGAR

<28>

1. If, then, correlative clauses are to be analysed as complement sentences they should have approximately the structure of (21):

TEX CIRC - CONDICION

2. The question of whether correlative clauses function as NPs has already been considered in relation to its analysis as a relative clause.

FENONOMO - COGNITIVO

3. Our answer, it will be recalled, was negative.

PORTADOR - ADSCRIPTIVO

4. (We shall, however, also consider as a complement analysis of correlatives, a way of avoiding this conclusion, one which postulates that the complement is part of a prep. phrase.)
EXPERIMENTANTE - COGNITIVO

<29>

1. Our second point, however, is that even if correlative clauses may be analysed as NPs they can clearly function in ways that are atypical of a complement S.

TEX

TEX

CONCESSION

2. The latter is, it would appear, without exception, an abstract nominal, therefore occurring only in environments that permit abstract nouns and is being excluded from those that demand concrete nouns.

PORTADOR - ADSCRIPTIVO

3. In this way we may account for the ungrammaticality of (22) and (23).

CIRC - MANERA

4. Correlative clauses, however, can function as concrete nominals

AGENTE

5. The third point is that correlative clauses lack a complementizer.

TEX

POSEEDOR

6. Since the antecedents are permutable the only candidates in surface structure for the role of complementizer are the relator words themselves.

CIRC - CAUSA

7. They do indeed appear in complementizer position.

PORTADOR - CIRC - LUGAR

8. In this and in all other aspects, however, they behave as wh-words and not complementizers.

CIRC - TEMATICA

<30>

1. Our point, it should be noted, is not that correlative clauses do not have a complementizer in deep structure, since it is a common assumption now to consider all S_s to have a complementizer, but rather that complement sentences are characterized by retaining their complementizers in surface structure.

IDENTIFICADO

2. When under certain conditions the complementizer is deletable, replacing it does not generally render sentences (25) where the complementizer is deletable in both the Spanish and the English, but both are equally grammatical with the complementizer replaced.

CIRC - TIEMPO

3. There is, however, no complementizer that can be totally replaced in the case of correlative structures.

TEX

EXISTENTE

4. Of course, it may be counter-argued that the complementizer has been obligatorily deleted by a very general rule, which prevents it from co-occurring with a wh-form.

INTERPERS

INTERPERS

OBJETIVO

5. However, the very presence of a wh-form which has been fronted leaving a 't'-gap is uncharacteristic of a complement sentence but a sine qua non of correlative conjoining.

TEX

PORTADOR - ADSCRIPTIVO

<31>

1. It is characteristic of complementizers that they subcategorize verbs and adjectives with which their occurrence is associated.

EVALUACION

2. For example, the word claim in English is subcategorized for its occurrence with a that complement and its noncompatibility with a whether complement.

TEX

OBJETIVO

3. Hence the grammaticality of (27) and the ungrammaticality of (28).

TEX

EVALUACION

4. It is, moreover, true that many complements subcategorize not only verbs but also adjectives and even nouns.

TEX

INTERPERS

AGENTE

5. Correlative clauses, on the other hand, might also be considered to subcategorize certain lexemes.

AGENTE

6. But their properties in this respect are entirely different.

TEX

PORTADOR - ADSCRIPTIVO

7. Firstly, they may really only be considered to subcategorize verbs and, secondly, the subcategorization is entirely predictable from properties of each of the sets of correlative words; a qualitative adjective in the case of tal and cual and a quantifier adjective in the case of tanto...cuanto.

TEX

AGENTE

8. That is, the tanto-cuanto pair as adjectival quantifiers function as degree adverbials and quantifiers like mucho and poco; the tal...cual set, on the other hand, are semantically qualitative and their behaviour is in general of the nonquantifier adjective.

TEX

AGENTE

9. The latter but not the former can occur after the copula estar.

PORTADOR - CIRC - LUGAR

<32>

1. We may summarize this section by concluding that correlatives differ from the established types of complement clauses in a variety of ways:(a) in not necessarily functioning as a NP,(b) in having no overt complementizer, (c) in requiring wh-fronting as a condition of conjoining, (d) in subcategorizing properties.

TEX

PORTADOR - ASCRIPTIVO

<33>

1. It is time to consider Chomsky's (1976) proposal.

TEX PROCESO COGNITIVO

2. It is one that can be called a form of complementation, though this nomenclature is never used.

IDENTIFICADO

3. It deserves treatment apart, since under this analysis some of the arguments that we have used against the complementation analysis above cease to be apposite.

POSEEDOR

<34>

1. The essence of this proposal is that comparatives are introduced by prepositions, than and as in English, and their complements are either NPs or Ss.

IDENTIFICADO

2. The structure implied by these assumptions, for cases where the complement is a S (i.e. clausal), is represented in (29).

PORTADOR - CIRC - LUGAR (TEX)

3. One of the advantages of the correlative structures we have chosen to study, as opposed, say, to the more prevalent forms tanto and tal...como, is that these relator words permit the inference of considerably more structural information.

IDENTIFICADO

4. Como, for example, may be considered either a complementizer, a preposition or a wh-form.

PORTADOR - ADSCRIPTIVO

5. There is no such ambivalence with cual and cuanto since these are clearly adjectival wh-constituents of the embedded S.

EXISTENTE

6. With this clearly established it is possible to challenge the prepositional phrase analysis on the following points.

CIRC - TIEMPO

<35>

1. In the first place, the problem posed for this analysis is that of establishing that correlatives possess an underlying prepositional-phrase structure.

TEX

IDENTIFICADO

<36>

1. Unlike all other prepositional-phrase structures of the language, not only is there no overt preposition in surface structure, there is almost no preposition that can be conceived as occurring in this position.

CIRC - COMPARACION

2. Prepositions, like complementizers, when deleted, are normally replaceable.

PORTADOR - ADSCRIPTIVO

3. There is no preposition that can be replaced in these structures and still form a grammatical sentence.

EXISTENTE

<37>

1. Secondly, there appear to be no other cases in which the conditions of identity, that exist between the antecedent words *tal* and *tanto* and their corresponding relator words *cual* and *cuanto*, come across an independent and intervening preposition such that the latter are fronted.

TEX

EXISTENTE

2. That is there are no cases such as (30), but only cases where the preposition is pied-piped with the fronted noun and is therefore already in the embedded S.

TEX

EXISTENTE

3. Moreover, it is clear that the prepositional phrase analysis does not avoid all the objections levelled at the more general complementation analysis.

TEX

INTERPERS

AGENTE COMO POSEEDOR

4. It is still atypical for the process of complementation (even if the complement of a preposition) to have as a necessary condition that the complement S undergo wh-fronting and that the complementizer be deleted.

EVALUACION

<38>

1. To summarize:

O.T. PROCESO LOCUTIVO

2. We have considered two possibilities : (a) that the correlative clauses are S complements, (b) that they are complements preceded by a proposition.

EXPERIMENTADOR - COGNITIVO

<39>

1. They have failed to meet certain criteria of the former.

AGENTE COMO PORTADOR - ADSCRIPTIVO

2. They are not always NPs, they lack a complementizer, they do not subcategorize verbs as complements Ss do, they inevitably involve wh-fronting.

PORTADOR - ADSCRIPTIVO

3. Against the prepositional phrase complement analysis it has been noted That there is not the slightest evidence that it contained a preposition, its behaviour, in fact, being quite contrary and the wh-fronting condition is atypical of complement-type structures.

(TEX) CIRC - TEMATICA

<40>

1. The concept of complementation that I have discussed is, I think, the generally accepted one.

IDENTIFICADO

2. However, it should be recalled that many linguists entertain much freer notions of how complementation functions; some so free as to be beyond the pale empiricism.

EX TEX INTERPERS POSEEDOR

3. Clearly against such notions few arguments suffice.

INTERPERS (TEX) CIRC - TEMATICA

Correlative Conjoining

<41>

1. In opposition to the three conjoining processes examined above, consider now the following as an account of the facts of correlative structures.

(TEX) CIRC - TEMATICA

2. It is one that does little more than state the facts that are patent at the level of surface structure.

IDENTIFICADO

3. (a) An AP is expanded into AP'-S.

OBJETIVO

4. (b) AP' dominates the correlative antecedent tal or tanto.

AGENTE

5. (c) S' contains an AP node in the same functional position and dominates the corresponding relator word cual or cuanto.

POSEEDOR

6. (d) There is a process that moves the relator words into the complementizer position in S', bringing about the deletion of the complementizer.

EXISTENTE

<42>

1. The above hypothesis in effect states that 'relative conjoining', occurs when structural conditions represented by (32) are present.

EMISOR

2. Only assumption (c) above is in any way an innovation, and even that is implicit in all analyses of clausal comparison.

PORTADOR - ADSCRIPTIVO

<43>

1. Consideration must now then be given to the linguistic consequences of these assumptions and to the accuracy with which they generate the structure types being considered.

O.T. OBJETIVO COMO PROCESO COGNITIVO

2. (i) By assuming that the dominating category for correlative structures is adjective phrase, the distributional properties of correlatives are accurately accounted for.

CIRC - MEDIO

3. That is, we predict that they will be found

(a) predicates (as predicate adjectives);

(b) noun phrases (as attributive adjectives and nominalization of adjectives);

(c) verb phrases (after verb) as manner degree adverbials;

(d) modifier of adjective or adverb (i.e. degree adverbial).

since in all these environments it is well known that the phrase structure rules develop the category adjective

TEX EMISOR

4. (ii) We have provided a motivated account for the nonappearance of a complementizer and the absence of a conjunction and a preposition.

AGENTE

5. (iii) The obvious statement that wh-fronting occurs has been made.

EMITIDO

6. It should be noted that even in a description of contemporary language, there must be a wh-fronting rule for adjectives to account for questions such as (33) and headless relatives such as (34).

INTERPERS

CIRC - LUGAR

7. (iv) We have accounted for correlative conjoining being an embedding, and

(v) for why they are modifiers of nouns.

AGENTE

<44>

1. In other words, the analysis given above accounts for all that is problematic under the alternative assumptions.

TEX

AGENTE

2. It is an account that is supremely natural.

PORTADOR - ADSCRIPTIVO

3. What is significant is that the analysis I have provided is precisely adaptable to the domain of comparative formation established by Bresnan on the evidence essentially of English and which she has expressed as (35).

IDENTIFICADO

4. This rule applies to the structure developed from (36).

PORTADOR - CIRC - DESTINATARIO

5. We have simply in this case to interpret X as AP and (32) can be interpreted as an instantiation of (36).

AGENTE

Conclusion

<45>

1. Let us now attempt to give perspective to the arguments and conclusion of this paper: On the basis essentially of data from English a proposal has been made (Chomsky 1976) that comparative clauses should be analysed as a form of complementation.

O.T.

PROCESO LOCUTIVO

2. This proposal, if confirmed, would strongly suggest that natural language (i.e. U.G.) permits only three types of sentential recursive process.

EMISOR

3. As the data of English appears to provide little conclusive evidence on this matter, we have examined a form of Spanish comparative correlation which provides clearer structural markings of the functional words involved.

CIRC - CAUSA

4. On the basis of the Spanish data it has been concluded that not only can this form of correlative conjoining not be a form of complementation but that it can neither be accounted for in terms of any of the other two established recursive processes.

CIRC - CAUSA

5. Since it is clearly a form of S recursion it follows that a fourth sentential recursive device must be recognized.

CIRC - CAUSA

6. Per se this conclusion does not invalidate the analysis of English comparatives as prepositional complements suggested by Chomsky (1976).

CAUSANTE - ADSCRIPTIVO

7. All it does is to cast a certain suspicion, since the most natural analysis of correlative conjoining is simply a version of the rival analysis of the domain of comparison also designed to account for the comparatives of English.

IDENTIFICADO

SOME CONTEXTUAL RELATIONS BETWEEN SENTENCES IN ENGLISH

SOME CONTEXTUAL RELATIONS BETWEEN SENTENCES IN ENGLISH

<1>

1. Within the now no longer homogeneous theory of generative transformational grammar one of the most controversial issues is the concept of deep and surface structure.

CIRC - LUGAR

2. Some linguists doubt the existence of this dichotomy; others, who acknowledge it, hold diverging views on the exact nature of the relationship between deep and surface structure.

EXPERIMENTADOR - PROCESO COGNITIVO

<2>

1. This paper attempts to analyse the relevance of contextual relations in determining the surface structures of a certain group of English sentences.

O.T. AGENTE

<3>

1. In the present context it is pertinent to recall some of the brilliant concepts of the Prague School as developed by V. Mathesius and applied to English by J. Firbas, J. Vachek and others.

CIRC - TIEMPO

2. According to J. Firbas the late Vilem Mathesius made a distinction between "formal sentence analysis" and "functional sentence analysis".

CIRC - EMISOR

3. These two kinds of syntactic investigation are concerned with two complementary aspects of syntactic structure: "formal sentence analysis... is concerned with what is generally called parsing, whereas the latter (functional sentence analysis) examines the semantic structure of the sentence with regard to the actual situation, i.e. in fact to the context, both verbal and situational.

PORTADOR - CIRC - TEMATICA

4. It might be said that the latter examines the functional perspective of the sentences..."

INTERPERS

AGENTE

<4>

1. From the point of view of the functional perspective "elements that may be inferred either from the verbal or from the situational context" are regarded as the communicative basis of the sentence, this usually being called the theme.

CIRC - PUNTO DE VISTA

2. Its counterpart is called rheme, carries new information and plays the more dynamic role in the sentence from the communicative point of view.

PORTADOR - IDENTIFICADO

3. These two aspects are complementary and they usually play a decisive role in determining word order and other phenomena.

PORTADOR - ADSCRIPTIVO

4. We would contend that V. Mathesius's distinction between "formal sentence analysis" and "functional analysis", while perhaps still burdened slightly with psychologicistic notions and though not explicitly defined, can be shown to correspond to the well-known "deep structure" - "surface structure" dichotomy of generative grammar, and that a modification of our present view of this relationship might yield important insights into the deep structure of sentences.

INTERPERS

IDENTIFICADO

5. "Theme" and "rheme" (in American structural linguistics: "topic" and "comment"), it seems, are of relevance in the description of the surface structure of English sentences in context.

PORTADOR - ADSCRIPTIVO

6. The example chosen here is the relation of different types of relative clauses to the verbal context.

IDENTIFICADO

<5>

1. K.E. Heidolph has shown that semantically constituents such as topic and comment are relevant in determining the surface order of constituents as well as the intonational pattern of German sentences.

EMISOR

2. Furthermore, according to Heidolph, certain structural processes such as the "topicalization" or "commentization" of a constituent are obligatorily triggered by the presence of certain contextual features such as (+mentioned) or (-mentioned).

TEX

CIRC - EMISOR

3. Applied to English, this notion can lead to important insights into the structure of sentences.

CIRC - TIEMPO

<6>

1. In (2) we have an NP this man, which can be regarded as the topic of (2).

CIRC-LUGAR

2. The topicalized NP in (2) is obviously a second-mention form and refers back to an NP a man in the antecedent sentence 1. : if (1) and (2) follow each other successively in this order in connected discourse, the topicalized NP this man in (2) refers by implication to the same denotatum as the non-topicalized NP a man in (1).

PORTADOR - ADSCRIPTIVO

3. The NP this man in (2) is the theme or "communicative basis" of (2), whereas the NP an accident is the rheme or the communicative centre of (2).

IDENTIFICADO

4. The NP a man in (1) is the functional rheme (or comment) in that sentence.

IDENTIFICADO

5. Thus, we find a rheme-theme (or comment-topic) connection between the contextually connected sentences (1) and (2).

TEX AGENTE

<7>

1. Apart from the differences between the two determiners of the two NP's in (1) and (2) : introductory (or "indefinite") anaphorical "a" vs. non-introductory "this", we find an important distinction in "prominence" between the first-mention form and the second-mention form.

CIRC - ADITIVO

2. Normally, the "commentized" NP an old man in (1) carries the primary accent in 1. whereas the topicalized NP this man in (2) marks the place of the complementary secondary accent.

INTERPERS

POSEEDOR

3. According to Heidolph the topic of a sentence connected in discourse permits only the contrastive accent.

CIRC - EMISOR

4. If, on the other hand, an indefinite NP such as an old man in (4) does not carry the primary accent, the accented constituent will be interpreted as either contrastive or emphatic:

TEX CIRC - CONDICION

5. Generally it can be said that in contextually connected sentences in English - and presumably in many other languages as well - the topicalized constituent, which connects the sentence with an antecedent sentence, will normally have the initial position, while the commentized one tends to appear at the end of the sentence.

INTERPERS

INTERPERS

CIRC - LUGAR

6. A systematic investigation of the regularities underlying these processes would presumably show that a number of transformations resulting in surface forms of synonymous underlying structures can be shown to be determined by contextual features of the kind outlined here.

CAUSANTE - PROCESO COGNITIVO

7. Insight into these regularities would mean progress in the research on problems like word order.

IDENTIFICADO

<8>

1. In explaining the underlying structure of sentences like (2) we follow Ch. J. Fillmore, who contends that the sentence has essentially a tripartite structure.

CIRC - TIEMPO

2. The initial element S dominates a constituent Modality, and Auxiliary, and the so called Proposition.

AGENTE

3. Mod is the dominant category for all sentential adverbs (such as Yesterday in (1)).

IDENTIFICADO

4. Furthermore, it can be expanded into an empty constituent called Topic, which corresponds to the so-called "Thema" postulated for German sentences by E. S. Klima, Heidolph, and P. Kiparsky.

TEX

OBJETIVO

5. In the subsequent formation rules Prop is expanded into an ordered series comprising Actants - a procedure closely parallel to that of L. Tesnière - the Predicator (realized either as an adjective, a verb, or a predicative noun) and an empty element called Comment.

CIRC - LUGAR

<9>

1. Hence a sentence such as (2) has the following underlying structure:

TEX

POSEEDOR

2. (+m) in diagram 5. is Heidolph's contextual feature "mentioned".

IDENTIFICADO

3. Let us now assume that the contextual features serve to trigger two different transformations, which correspond to the processes of "topicalization" and "commentization".

PROCESO COGNITIVO

4. If the contextual features of a given constituent is (+m), then it is placed, by applying an obligatory topicalization rule, under the dominance of the Topic-element, which defines the structural theme, i.e., the position of the secondary accent.

CIRC - CONDICION

5. This rule corresponds directly to the Thematisierungsregel formulated by E. S. Klima and P. Kiparsky.

IDENTIFICADO

6. The commentization rule places the constituent marked with the feature (-m) under the dominance of the Comment-element, which defines the position of the primary accent.

AGENTE

7. We then obtain the following rule : (Figure 6)

AGENTE

8. Other rules provide for the following processes: the preposition P of the pre-auxiliary constituent is obligatorily deleted; the unspecified agent-phrase is eliminated after the passivization of the verbal predicator; Det is replaced by this, if it dominates (+m), or by a , if it dominates (-m).

AGENTE

<10>

1. If we assume that the NP of Det man in a structure like (5) shows the contextual feature (-m), whereas the NP in Det accident shows the feature (+m), we might expect something like the following:

CIRC - CONDICION

2. An additional permutation for the correct placement of the finite verb is required.

POSEIDO

3. If there are several NP's showing the feature (+m), the one which is mentioned in the sentence immediately preceding is selected for topicalization.

CIRC - CONDICION

4. Where there is a (-m) alternative, the constituent structure can presumably be so organized that the rightmost actant is selected for commentization.

CIRC - LUGAR

<11>

1. If there is no constituent present in a sentence which has a Det showing the feature (-m), the primary - or "rhematic" - accent is automatically carried by the verb (or any other pred-element)

CIRC - CONDICION

2. Of course, much further research is required before we can exactly specify the conditions for the insertion of the correct Del-forms.

INTERPERS

POSEIDO

3. However, it can be shown even at this stage of investigation that the anaphorical determiner stands in a structural relation to the anaphorical pronoun, which could be formalized into the framework of a grammar taking contextual features into account.

TEX

INTERPERS

CIRC - TIEMPO

4. Thus we would claim that the pronoun in this sense can be viewed as the equivalent of a previously mentioned NP in which the noun has been deleted :

TEX

INTERPERS

IDENTIFICADO

5. It should be noted that the thematic accent in one option of (10) disappears together with the eliminated noun if the so-called "Pronoun" is chosen.

INTERPERS

AFECTADO (EXISTENCIA)

6. Therefore the anaphorical pronoun can be viewed as the isolated form of the anaphorical determiner.

TEX

IDENTIFICADO

<12>

1. Continuing our study of different types of relative clauses, we now return to a pair of contextually linked sentences similar to the sequence (1) -(2).

O.T.

CIRC - TIEMPO (TEX)

2. In the light of our findings on contextually connected sentences, we can now say that the sentence (11) contains a rhematic NP an old man identical with the thematic NP this man in the following sentence (12).

CIRC - CAUSA

3. Sentence (12) can be said to contain some new information about the referent of the antecedent sentence ; it contains a new comment owns a garage.

POSEEDOR

4. It should be noted that this concept corresponds directly to the traditional notion of so-called non-restricted relative clauses.

INTERPERS

IDENTIFICADO

5. (We shall substitute the term 'descriptive' and 'selective' for 'restrictive'.)

AGENTE

6. Thus we can formulate the following set of phrases:

TEX EMISOR COMO AGENTE

7. The fact that a descriptive relative clause such as (17) may be viewed as a paraphrase of - and therefore as transformationally equivalent with - contextually connected pairs of sentences such as (13) - (14), and contextually linked coordinations such as (15) - (16) may indicate that the whole set (13) - (17) can be derived from the same underlying string of sentences.

CAUSANTE - PROCESO COGNITIVO

8. Before pursuing this notion further we shall try to define the different contextual implications of selective relative clauses.
O.T. CIRC - TIEMPO (TEX)

9. Traditionally the selective relative clause has been viewed not as a modifier providing additional information about the corresponding head, but rather as a part of the whole NP necessary for guaranteeing its correct reference.

CIRC-PUNTO DE VISTA

10. Thus a text or a conversation could begin with such a sentence as (18), whereas (19) requires an antecedent sentence containing an identical NP:

TEX EMISOR COMO AGENTE

11. A sentence like (19), though perfectly well formed if regarded in isolation is not acceptable if not preceded by a sentence fulfilling the above requirements.

PORTADOR - ADSCRIPTIVO

12. This leads H. St. Sorensen to analyse such kinds of relative clause construction as obligatory subconstituents of the definite determiner, which can then be only optionally deleted in context.

CAUSANTE - PROCESO MATERIAL

13. This analysis suggested a solution, now often accepted in generative studies, which takes advantage of the possibility of having a recursive initial element under the domination of the determiner.

CAUSANTE - COGNITIVO

<13>

1. If these observations hold true, the following sequences should be paraphrases of each other:

CIRC - CONDICION

2. If (13) - (17) and (20) - (22) can be regarded respectively as sets of paraphrases, we can establish a two-way correspondence between contextually connected sentences - or coordinations of contextually connected sentences - which might be viewed as a two-way transformational relationship:

CIRC - CONDICION

3. In the series of complex sentences (23) - (23), which we supposed to be equivalent, we have a sequence of two contextually linked sentences S1 (and) S2 given as a coordination of successive sentences in (23).

CIRC - LUGAR

4. In (24) we discover the embedding of the subsequent sentence into the preceding one, whereas in (25) the preceding sentence can be viewed as embedded into the following.

CIRC - LUGAR

5. Thus the complex sentences (24) and (25) can be regarded as being derived by the same transformational process working in two different directions.

TEX OBJETIVO

6. We would suggest that this transformational relationship, if it can be shown to be consistent with all relevant facts about different kinds of relative clauses, should be used in the formulation of a simple description of relative clauses.

INTERPERS OBJETIVO COMO MEDIO

<14>

1. M.S. Annear has suggested that there may be a relationship between sentence sequences in discourse and the different kinds of relative clause constructions.

EMISOR

2. She tries to show that this relationship is a semantic one, but fails to give a solution that is completely satisfactory.

AGENTE

3. E. Bach, on the other hand, would derive at least all descriptive relative clause constructions transformationally from coordinations of sentences.

AGENTE

4. Interestingly enough he states that there are many languages lacking non-restrictive relative clauses and using coordinations of sentences instead where the fixed order of the conjoined elements corresponds to the order of the underlying structure suggested in this paper.

INTERPERS EMISOR

5. The non-existence of certain relative clause types in some languages rules out the ~~universal solution hitherto~~ suggested in generative grammars.

CAUSANTE-ADSCRIPTIVO

6. The solution proposed in this paper has the advantage of being more economical.

POSEEDOR

7. Thus in a description of relative clause modification deriving the required clauses by recursion of the initial symbol all derivations of a dominated S will have to be blocked except those containing a noun identical with the matrix noun.

TEX CIRC - LUGAR

8. Hence the following procedure is suggested:

TEX EMITIDO

9. In the first rule of the base component coordinations of sentences are derived.

CIRC - LUGAR

10. If these coordinated sentences contain nouns identical in reference - this identity could be handled by an appropriate indexing convention - the antecedent coordinate can be embedded into the following one, thus yielding selective relative clause constructions.

CIRC - CONDICION

11. Since each noun in a coordinated sentence which is identical with a noun in a preceding sentence of the same coordination automatically carries the feature (+mentioned) and no noun carrying this feature can be commentized, we can account for the fact that a commentized noun phrase cannot be modified by a restrictive relative clause.

CIRC - CAUSA

<15>

1. Descriptive clauses, on the other hand, can be thought of as the result of embedding the following coordinate into the preceding one.

IDENTIFICADO

2. This assumption is in accordance with the fact that descriptive relative clause modification is possible with thematic as well as with rhematic noun phrases.

PORTADOR - CIRC - MANERA

<16>

1. Of course our brief treatment of this complex problem has left many questions open.

O.T. INTERPERS AGENTE

2. We do hope, however, that we have shown that structural relations between sentences are relevant to the description of certain structures within sentences.

O.T. EXPERIMENTADOR - PROCESO AFECTIVO

3. Research on contextual relations is still in its infancy.

PORTADOR - ADSCRIPTIVO

ON THE RELATION BETWEEN SYNTAX, SEMANTICS
AND PRAGMATICS

ON THE RELATION BETWEEN SYNTAX, SEMANTICS,
AND PRAGMATICS

<1>

1. There is yet much confusion over the relation between syntax and semantics.

EXISTENTE

2. From the clear assertion that "grammar is autonomous and independent of meaning" (Chomsky, 1957:17), transformationalists have waived to the position that "the syntactic and semantic structure of natural languages evidently offers many mysteries, both of fact and of principle, and any attempt to delimit these domains must certainly be quite tentative"(Chomsky 1965:163).

CIRC - ORIGEN

3. The related domain of PRAGMATICS has only recently begun to arouse interest among linguists and psycho-linguists.

CAUSANTE - ADSCRIPTIVO

4. Just where it should fit into a theory of language is even less clear than the relation of syntax and semantics.

PORTADOR - ADSCRIPTIVO

5. It is the purpose of the present paper to attempt to define the notions SYNTAX, SEMANTICS, and PRAGMATICS and to show how they interrelate.

O.T. IDENTIFICADO

<2>

1. It has become abundantly clear in the psycho-linguistic research of recent years that the process of human communication is far more intricate and varied than was once thought.

INTERPERS

CIRC - LUGAR

2. Studies of the physical form of the speech signal, for instance, have revealed far less consistency than had been anticipated with the advent of the spectrograph early in the 1940's.

EMISOR

3. High hopes for an efficient voice typewriter, or reading machines for the blind soon dwindled, as the enormity of the problems began to emerge and obstacle after obstacle was encountered(Liberman, et al, 1967).

AFECTADO

4. It is clear now, that automatic speech perception will require a good deal more than a simple pairing of speech signals and words.

INTERPERS

POSEEDOR

5. Also, at the cognitive end of speech processes, applied linguists have run afoul of numerous difficulties in trying to discover the psychological underpinnings of language.

TEX

CIRC - TEMATICA

6. In this area, controversy is the order of the day.
CIRC - LUGAR

7. The theoreticians do not agree.
EXPERIMENTADOR - COGNITIVO

8. The problems of mechanical translation of language seem all but insurmountable.
PORTADOR - ADSCRIPTIVO

9. The foreign language teacher in the classroom is warned by none other than N. Chomsky himself (1966a) that linguistic theory as yet has no clear answer to the problem of how best to teach a language; and, moreover, he adds that we have no good reason to expect a solution to be forthcoming at anytime in the foreseeable future.
RECEPTOR

<3>

1. In view of all this uncertainty, the psycholinguist, the language engineer, the foreign language teacher, and anyone else interested in understanding the process of language communication is bound to experience a certain sense of frustration if not dismay.
CIRC - CAUSA

2. Why is it that with the great amount of time and effort that has been expended in language research there has been so little progress?
CIRC - CAUSA

3. The very experts from whom we would expect enlightenment point up obstacles and mysteries, and ultimately (in the case of transformational theory) suggest that perhaps no solution is even possible.
EMISOR

4. The paradoxical insight achieved by costly research and deep thinking is that understanding may be logically impossible.
IDENTIFICADO

<4>

1. To a person interested in getting places, and doing things, this philosophically challenging conclusion is incorrect by definition.
CIRC - PUNTO DE VISTA

2. Somebody must have made a mistake somewhere.
AGENTE

3. The very foundation of modern technology rests on the fundamental assumption that there is order in the universe and that this order can be discovered.
PORTADOR - CIRC - LUGAR

4. When someone challenges this assumption, as far as an empiricist is concerned, his challenge is based either on error or speculation, and in either case it must be disregarded.

CIRC - TIEMPO

5. The empiricist begins with the assumption that even though the process of language use is complex, it can nevertheless be understood.

EXPERIMENTADOR - COGNITIVO

6. How is it then that transformationalists have come to the conclusion that answers to the fundamental problems of linguistics may not exist?

CIRC - MEDIO

7. We must assume there is some unsuspected error lurking somewhere in their theory of language.

EXPERIMENTADOR - COGNITIVO

<5>

1. On inspection, we discover a controversy over the nature of language which developed soon after Chomsky's first major publication on language theory (Syntactic Structures, 1957), and which continues to the present.

CIRC - TIEMPO

2. In this work, Chomsky argued that the communicative use of language was not the central concern of linguistic theory - rather that the primary interest of linguistics was the internal 'structure' of language.

CIRC - LUGAR

3. He was challenged on this assumption by Roman Jakobson (1959), a noted member of the Prague school of linguistics, and by Anton Reichling (1961), both of whom contended that syntax was itself a vehicle of meaning and could not be regarded as independent of semantics.

RECEPTOR

4. Uhlenbeck (1963) extended Reichling's arguments, but Chomsky (1964) continued to maintain that the communicative use of language was subsidiary, and derivative - that language had its essence rather in an "inner totality" (1964:58).

EMISOR

5. Later Chomsky (1966b) totally rejected the criticism of his assumption that language is self-contained, and continued to hold this view (1968,1969).

CIRC - TIEMPO

6. Uhlenbeck (1967), Rommetveit(1968), Oller, Sales, and Harrington (1969) have continued the debate pointing up the necessity for examining language use in communicative settings.

EMISOR

7. Sales, Harrington and I have argued that it is logically impossible for a theory based on Chomsky's initial assumption about the nature of language, to explain the actual use of language.

EMISOR

8. It is quite impossible to account for the encoding and decoding of messages about objects, relations, events, etc., with a theory that denies that such coding processes actually take place.

EVALUACION

9. Chomsky, for example, maintains that language use is free from stimulus control (1968:11), and that questions concerning the 'appropriateness' of sentences to situations are outside the realm of linguistics.

EMISOR

10. Is it any wonder then that transformationalists should deduce that the cognitive basis of language may be beyond the scope of human comprehension?

INTERPERS

EXPERIMENTADOR - COGNITIVO

11. That, for instance, the relation between syntax and semantics "offers many mysteries"?

TEX

POSEEDOR

<6>

1. If we purge the error which leads to these mysteries, it is likely that they themselves will evaporate.

CIRC - CONDICION

2. The central error of transformationalism has so far gone through two stages:(a) it defined syntax as independent of meaning.

POSEEDOR

3. This proved to be an untenable definition and was modified (Katz and Fordor,1963; Katz and Postal, 1964;Chomsky, 1965; Katz,1966) such that syntax and meaning were both regarded as essential to the grammar of language, but the error persisted in that (b) grammar was defined as independent of communicative settings and of the native speaker's knowledge of the world.

PORTADOR -ADSCRIPTIVO

4. Since language is intrinsically structured FOR and BY communication, this error incapacitates transformational theory.

CIRC - CAUSA

5. The theory becomes inherently circular in trying to explain words in terms of other words, sentences in terms of other sentences, etc., never breaking out of the circle to relate words, sentences, etc., to extra-linguistic entities, relations, and so on.

PORTADOR - ADSCRIPTIVO

<7>

1. The argument against a theory which seeks to explain language apart from its use is by no means new.

PORTADOR - ADSCRIPTIVO

2. It has been expounded by such men as Albert Einstein (1941:324) and Bertrand Russell (1940:328).

EMITIDO

3. Both of them have pointed out the fact that language is related in knowable ways to objects, events, and relations in the perceived world.

EMISOR

4. In order to illustrate the validity of this position let us consider some of the contentions to the contrary.

CIRC - FINALIDAD

5. The initial point, advanced by Chomsky (1957), in favor of treating 'grammar' as independent of meaning hinged on the assumption that sentences like (1) are meaningless though grammatical, whereas sequences like (2) are also meaningless but are ungrammatical.

AFECTADO

6. If this were correct, that is, if there were grammatical sequences which were meaningless as well as ungrammatical sequences which were meaningful this would seem to be evidence for the independence of grammar and meaning.

CIRC - CONDICION

7. However, (1) is not only more grammatical than (2), but it is also more meaningful.

TEX PORTADOR - ADSCRIPTIVO

8. If we use our imaginations, we can supply an interpretation for it.

CIRC - CONDICION

9. The word colorless can have the meaning of 'insipid'; green can mean 'immature'; sleep can mean 'lie dormant'; furiously can be taken as the phrase 'in a state of potential explosiveness'.

IDENTIFICADO

10. Hence the paraphrase, (3).

TEX EXISTENTE

11. In fact, it would be correct to state that (1) is actually only a more complicated example of the apparent conceptual difficulty in (4).

TEX

INTERPERS

PORTADOR - ADSCRIPTIVO

12. The obvious interpretation of the word colors in (4) yields a senseless sequence.

AGENTE

13. Ideas simply are not physical things which can have color (at least not red, blue, green etc.).

PORTADOR - ADSCRIPTIVO

14. In order to render (4) meaningful we must choose a less obvious interpretation of 'colors', e.g., types or varieties.

CIRC - FINALIDAD

15. This is the same operation which we performed with respect to (2).

IDENTIFICADO

16. In (4) it is merely applied fewer times.

CIRC - LUGAR

<8>

1. Thus it seems that Chomsky's illustration fails.

TEX INTERPERS AFECTADO

2. Syntax is not independent of meaning.

PORTADOR - ADSCRIPTIVO

3. The difference between sentences (1) and (2), rather than supporting the view that grammar and meaning are independent, suggests a deep interrelation between syntax and semantics which the superficial conflicts of wording in (1) neatly conceal.

CAUSANTE - COGNITIVO

4. (Similar arguments can easily be adduced to confute the case in which supposedly meaningful sentences are ungrammatical.

EMITIDO

5. Their meaningfulness is always dependent upon a relaxing of certain syntactic and semantic restrictions, which shows, again, an interdependence of meaning and grammar rather than an independence.)

AFECTADO

<9>

1. Agreeing with Chomsky's viewpoint favoring the independence of grammar and meaning, Katz and his collaborators set forth an argument in favor of treating meaning as independent of settings.

CIRC - CAUSA

2. As Sales, Harrington and I (1963) pointed out, their reasoning is precisely parallel to Chomsky's.

CIRC - COMPARACION

3. Whereas he claimed that syntax was independent of meaning, Katz, Fordor, and Postal claim that meaning is independent of settings.

CIRC - CONCESION

4. They apparently believe that the meaning of a sentence is autonomous of extra-linguistic entities, relations, etc., and that it exists independent of the speaker's knowledge of his world.

EXPERIMENTADOR - COGNITIVO

<10>

1. In this regard, consider the meaning of the sentence(5).

CIRC - TEMATICA

2. Since we know that theories are not the sorts of things which can have color any more than ideas can and that the word blue usually indicates the physically perceivable color of objects which are called "blue objects", a meaningful interpretation of (5) is not forthcoming unless we reinterpret the theory of relativity so as to allow it to refer to an object which might have color.

CIRC - CAUSA

3. This might be done in a situation where we had just referred to a red binding containing a write-up of the theory of evolution.

OBJETIVO

4. We could then say, the theory of relativity is blue, and mean that it was in a blue binder.

EMISOR COMO AGENTE

5. It is clear, however, that in trying to understand (5) we do not immediately have available in our minds its supposedly 'independent' meanings, as Katz et al's theorizing would suggest.

INTERPERS TEX CIRC - TIEMPO

6. Rather, we must infer a situation in which (5) might occur.

TEX AGENTE

7. Until such a setting is inferred, sentences like (5) do not make sense.

CIRC - TIEMPO

8. They leave us groping.

CAUSANTE - COGNITIVO

9. Clearly in these cases (which could be multiplied indefinitely), the inferred setting containing the referents of noun phrases, etc., is crucial to our understanding.

INTERPERS CIRC - TEMATICA

10. A theory which treats meaning as independent of settings cannot explain them.

EMISOR

<11>

1. In fact, the problem for their theory is still more serious.

TEX PORTADOR - ADSCRIPTIVO

2. Consider the perfectly ordinary sentence: (6).
PROCESO COGNITIVO

3. The understanding of (6) clearly requires an inferred setting.
POSEEDOR

4. In order to understand (6), the listener must know what sorts of "objects" (in the broadest sense of this term) boys are.
CIRC - FINALIDAD

5. The word boy must be related to perceivable objects, namely, boys in the known world of the listener; the relation between the act of hitting and the verb phrase, is hitting, must be known; the listener must know what sort of thing would be called a ball; he must know that the in each noun phrase indicates reference to a pre-specified (or implicitly specified) member of the object category in question; finally, the listener must know the relation between is V-ing and on-going events.
PORTADOR - ADSCRIPTIVO

<12>

1. All of this implies that meaning in even the simplest of sentences involves relations with settings.
CAUSANTE - COGNITIVO

2. Linguistic structure does not exist apart from the knowledge of the world which the speaker-listener communicates about.
EXISTENTE

3. Neither meaning nor syntax exists in a vacuum; nor do the two of them together exist independent of situational settings.
EXISTENTE

4. Although it is clear that words and word orders are bound up with meaning in the same way that syntax and meaning taken together are related to the native speaker's knowledge of the world, it remains to be stated more precisely just what is to be understood by the technical notions SYNTAX, SEMANTICS and PRAGMATICS, and what exactly is the nature of their interrelationships.
CIRC - CONCESION (INTERPERS)

<13>

1. In order to answer these questions, let us think of language use as occurring along three interrelated dimensions - the SYNTACTIC, the SEMANTIC, and the PRAGMATIC.
CIRC - FINALIDAD

2. On the syntactic dimension, elements (atomic and /or molecular in structure) are sequenced in time (we shall conceive of this as a left-to-right ordering existing at different levels simultaneously; on the semantic dimension, elements (atomic and or molecular) contrast with others of the same syntactic and or pragmatic type; and on the pragmatic dimension, time sequenced elements (atomic and/or molecular) are related systematically to perceivable entities, relations, events, etc., which themselves

are atomic and/or molecular in structure, and which are either structured or unstructured with respect to time sequence, directionality of relations, etc..

CIRC - LUGAR

<14>

1. The three dimensions suggested can be visualized in terms of an abstract conceptual space within which linguistic units are produced and understood by speakers, as in Fig. 1.

FENOMENO - PERCEPCION

2. The sentence (6) is roughly pictured in Fig. 1. in an attempt to visually represent its coding on the dimensions of SYNTAX, SEMANTICS, and PRAGMATICS.

OBJETIVO

3. The figure is intended merely to serve as a suggestive basis, not as an exact guide.

PORTADOR - CIRC - ROL

4. On the syntactic dimension we can see that there are sequences at the word and phrase levels.

CIRC - LUGAR

5. The sentence itself, as a molecular element of discourse, may also fall into a syntactic sequence as shown in Fig. 2.

PORTADOR - CIRC - LUGAR

<15>

1. The semantic dimension is the most difficult to conceptualize in terms of a picture.

IDENTIFICADO

2. Here, the various atomic and molecular elements of the syntax are classified according to syntactic and pragmatic types.

TEX OBJETIVO

3. This dimension can be conceived of as a set of states containing contrasting elements which in some cases are ordered, in others, unordered.

PORTADOR - CIRC - ROL

4. The selection of an element (atomic or molecular) in a given state effects the exclusion of all other similar elements.

CAUSANTE - EXISTENCIA

5. For example, when we say "the" in beginning the sentence pictured in the figure, we have made a selection from a number of items which could have filled this position in the noun phrase.

TEX

CIRC - TIEMPO

6. The unit "the" occupies space in the syntactic dimension insofar as it constitutes an element to appear in sequence with other elements.

POSEEDOR

7. It occupies space on the semantic dimension in that it constitutes a choice (a meaningful one) from among a number of other elements which could have occupied the position in question (e.g. a, some, any, etc.).

POSEEDOR

8. On the semantic dimension, choices are made between would-be simultaneous elements of a paradigmatic arrangement while on the syntactic dimension elements are produced in sequence.

CIRC - LUGAR

9. Just as the speaker makes a choice in selecting the rather than a, some etc. at that position, he follows it by the selection of boy rather than girl, cat, etc..

CIRC - COMPARACION

<16>

1. At the phrase level we find a similar situation.

CIRC - LUGAR

2. Just as the generation of "the" on the syntactic axis constitutes a choice on the semantic axis, the generation of the noun phrase the boy (as a molecular element) constitutes a choice on the semantic axis.

CIRC - COMPARACION

3. That is to say, this noun phrase stands in contrast with syntactically and pragmatically distinct noun phrases.

TEX

PORTADOR - CIRC - LUGAR

4. In occupying the subject position of the sentence it also acquires additional significance in as much as it is related to each of the succeeding elements within the sentence as a whole.

CIRC - CAUSA

5. In other words, the sentence unit containing the subject "the boy", verb "is hitting", and object "the ball" also constitutes a meaningful choice.

TEX

IDENTIFICADO

6. It occupies a position on the syntactic axis and may enter into syntactic relations with succeeding elements of the same type (in this case other sentences as shown in Fig. 2) and it occupies a position on the semantic axis insofar as it constitutes a choice between other sentences and sentence types (e.g., questions, imperative, etc.) which might occupy that position.

POSEEDOR

<17>

1. On the pragmatic dimension, the various syntactic-semantic elements are related to extra-linguistic perceived information and prior knowledge.

CIRC - LUGAR

2. Note, however, that all of the pragmatic information cannot conveniently be represented visually, e.g., 'prespecifiedness' as indicated by the definite article, class membership as indicated by common nouns, 'progressiveness' as indicated by certain verb phrases, etc..)

INTERPERS TEX

EMITIDO

3. It is the pragmatics of sentence generation that determines which choice will be made within each syntactic semantic state.

AGENTE

4. Since the speaker wants to talk about a particular (pre-specified or implicitly specified) member of the set of boys, he selects the; because he wants to talk about an object which he knows is a member of the set of boys, he selects boy; because he wants to mention an on-going action which he knows to be classified as hitting, he selects is hitting; and so on for the selection of the ball.

CIRC - CAUSA

5. The reason that the speaker opts to refer to the boy before the ball is due to the perceived directionality of the relation of hitting which holds between the boy and the ball, and on the desired emphasis.

PORTADOR - CIRC - CAUSA

<18>

1. SYNTAX is defined, then, as the sequencing of language elements in time; SEMANTICS is defined as the selection from among the contrasting elements of a given syntactic and/or pragmatic type ranging from the atoms to molecules of language structure; and PRAGMATICS is defined as the dynamic interaction between the speaker's knowledge of the world (including immediately perceived information) and the syntactic-semantic dimensions.

IDENTIFICADO

2. These dimensions, however, are by no means independent.

PORTADOR - ADSCRIPTIVO

<19>

1. Syntactic units constitute semantic units in that they embody implicit exclusions.

PORTADOR - ADSCRIPTIVO

2. When a syntactic unit of a given type is semantically selected, all others of the same type are implicitly excluded.

CIRC - TIEMPO

3. Insofar as linguistic elements carry information about extra-linguistic objects, relations, concepts, etc., they constitute pragmatic units.

CIRC - CONDICION

4. This is to say that any meaningful use of language involves simultaneous implementation of syntax, semantics and pragmatics.
TEX POSEEDOR

5. These three aspects of language do not exist independently and can only be understood in terms of their interrelationships.
EXISTENTE

<20>

1. When a language is viewed as a medium for communication, the implicit error of attempting to deal with linguistic units apart from meaning, or meaning apart from the speaker's knowledge of the world becomes explicit.
CIRC - TIEMPO

2. A brick wall does not exist apart from the space-time relation between its bricks and mortar.
EXISTENTE

3. Neither does a description of bricks or of mortar constitute an explanation of a brick wall.
PORTADOR - ADSCRIPTIVO

4. As a complex means of communication language can only be explained within the framework of the context of communication and this can only be accomplished through an integrated theory of syntax, semantics, and pragmatics.
CIRC - ROL

WHAT IS A SPEECH ACT?

WHAT IS A SPEECH ACT?

INTRODUCTION

<1>

1. In a typical speech situation involving a speaker, a hearer, and an utterance by the speaker, there are many kinds of acts associated with the speaker's utterance.

CIRC - LUGAR

2. The speaker will characteristically have moved his jaw and tongue and made noises.

AGENTE

3. In addition, he will characteristically have performed some acts within the class which includes informing or irritating or boring his hearers; he will further characteristically have performed acts within the class which includes referring to Kennedy or Khrushchev or the North Pole; and he will also have performed acts within the class which includes making statements, asking questions, issuing commands, giving reports, greeting, and warning.

TEX AGENTE COMO EMISOR

4. The members of this last class are what Austin called illocutionary acts and it is with this class that I shall be concerned in this paper, so the paper might have been called be "What is an Illocutionary Act?"

PORTADOR - ADSCRIPTIVO

5. I do not attempt to define the expression "illocutionary act", although if my analysis of a particular illocutionary act succeeds it may provide the basis for a definition.

EMISOR COMO AGENTE

6. Some of the English verbs and verb phrases associated with illocutionary acts are: state, assert, describe, warn, remark, comment, command, order, request, criticize, apologize, censure, approve, welcome, promise, express approval, and express regret.

IDENTIFICADO

7. Austin claimed that there were over a thousand such expressions in English.

EMISOR

<2>

1. By way of introduction, perhaps I can say why I think it is of interest and importance in the philosophy of language to study speech acts, or, as they are sometimes called, language acts or linguistic acts.

O.T. CIRC - ROL

2. I think it is essential to any specimen of linguistic communication that it involve a linguistic act.

INTERPERS

EVALUACION

3. It is not, as has generally been supposed, the symbol or word or sentence, or even the token of the symbol or word or sentence, which is the unit of linguistic communication, but rather it is the production of the token in the performance of the speech act that constitutes the basic unit of linguistic communication.

CIRC - COMPARACION

4. To put this point more precisely, the production of the sentence token under certain conditions is the illocutionary act, and the illocutionary act is the minimal unit of linguistic communication.

TEX

IDENTIFICADO

<3>

1. I do not know how to prove that linguistic communication essentially involves acts but I can think of arguments with which one might attempt to convince someone who was sceptical.

EXPERIMENTADOR - PROCESO COGNITIVO

2. One argument would be to call the sceptic's attention to the fact that when he takes a noise or a mark on paper to be an instance of linguistic communication, as a message, one of the things that is involved in his so taking the noise or mark is that he should regard it as having been produced by a being with certain intentions.

IDENTIFICADO

3. He cannot just regard it as a natural phenomenon, like a stone, a waterfall, or a tree.

EXPERIMENTADOR - PROCESO COGNITIVO

4. In order to regard it as an instance of linguistic communication one must suppose that its production is what I am calling a speech act.

CIRC - FINALIDAD

5. It is a logical presupposition, for example, of current attempts to decipher the Mayan hieroglyphs that we at least hypothesize that the marks we see on the stones were produced by beings more or less like ourselves and produced with certain kinds of intentions.

IDENTIFICADO

(TEX)

6. If we were certain the marks were a consequence of, say, water erosion, then the question of deciphering them or even calling them hieroglyphs could not arise.

CIRC - CONDICION

7. To construe them under the category of linguistic communication necessarily involves construing their production as speech acts.

POSEEDOR

<4>

1. To perform illocutionary acts is to engage in a rule-governed form of behaviour.

IDENTIFICADO

2. I shall argue that such things as asking questions or making statements are rule-governed in ways quite similar to those in which getting a base hit in baseball or moving a knight in chess are rule-governed forms of acts.

O.T. EMISOR

3. I intend therefore to explicate the notion of an illocutionary act by stating a set of necessary and sufficient conditions for the performance of a particular kind of illocutionary act, and extracting from it a set of semantical rules for the use of the expression (or syntactic device) which marks the utterance as an illocutionary act of that kind.

O.T. - EXPERIMENTADOR - PROCESO COGNITIVO

4. If I am successful in stating the conditions and the corresponding rules for even one kind of illocutionary act, that will provide us with a pattern for analysing other kinds of acts and consequently for explicating the notion in general.

CIRC - CONDICION

5. But in order to set the stage for actually stating conditions and extractin rules for performing an illocutionary act I have to discuss three other preliminary notions: rules, propositions, and meaning.

TEX

CIRC - FINALIDAD

6. I shall confine my discussion of these notions to those aspects which are essential to my main purposes in this paper, but, even so, what I wish to say concerning each of these notions, if it were to be at all complete, would require a paper for each; however, sometimes it may be worth sacrificing thoroughness for the sake of scope and I shall therefore be very brief.

O.T. AGENTE

RULES

<5>

1. In recent years there has been in the philosophy of language considerable discussion involving the notion of rules for the use of expressions.

CIRC - TIEMPO

2. Some philosophers have even said that knowing the meaning of a word is simply a matter of knowing the rules for its use or employment.

EMISOR

3. One disquieting feature of such discussions is that no philosopher, to my knowledge at least, has ever given anything like an adequate formulation for the rules for the use of even one expression.

IDENTIFICADO

4. If meaning is a matter of rules of use, surely we ought to be able to state the rules for the use of expressions in a way which would explicate the meaning of those expressions.

CIRC - CONDICION

5. Certain other philosophers, dismayed perhaps by the failure of their colleagues to produce any rules, have denied the fashionable view that meaning is a matter of rules and have asserted that there are no semantical rules of the proposed kind at all.

EMISOR

6. I am inclined to think that this scepticism is premature and stems from a failure to distinguish different sorts of rules, in a way which I shall now attempt to explain.

INTERPERS

PORTADOR - ADSCRIPTIVO

<6>

1. I distinguish between two sorts of rules:

AGENTE

2. Some regulate antecedently existing forms of behaviour; for example, the rules of etiquette regulate interpersonal relationships, but these relationships exist independently of the rules of etiquette.

AGENTE

3. Some rules on the other hand do not merely regulate but create or define new forms of behaviour.

AGENTE

4. The rules of football, for example, do not merely regulate the game of football but as it were create the possibility of or define that activity.

AGENTE

5. The activity of playing football is constituted by acting in accordance with these rules; football has no existence apart from these rules.

IDENTIFICADO

6. I call the latter kind of rules constitutive rules and the former kind regulative rules.

EMISOR COMO AGENTE

7. Regulative rules regulate a pre-existing activity, an activity whose existence is logically independent of the existence of the rules.

AGENTE

8. Constitutive rules constitute (and also regulate) an activity the existence of which is logically dependent on the rules.

AGENTE - PROCESO CREATIVO

<7>

1. Regulative rules characteristically take the form of or can be paraphrased as imperatives, e.g. "When cutting food hold the knife in the right hand", or "Officers are to wear ties at dinner".

POSEEDOR

2. Some constitutive rules take quite a different form, e.g. a checkmate is made if the king is attacked in such a way that no move will leave it unattacked; a touchdown is scored when a player crosses the opponents' goal line in possession of the ball while a play is in progress.

POSEEDOR

3. If our paradigms of rules are imperative regulative rules, such non-imperative constitutive rules are likely to strike us as extremely curious and hardly even as rules at all.

CIRC - CONDICION

4. Notice that they are almost tautological in character, for what the "rule" seems to offer is a partial definition of "checkmate" or "touchdown".

INTERPERS PORTADOR - ADSCRIPTIVO

5. But, of course, this quasi-tautological character is a necessary consequence of their being constitutive rules: the rules concerning touchdowns must define the notion of "touchdown" in the same way that the rules concerning football define "football".

TEX INTERPERS PORTADOR - ADSCRIPTIVO

6. That, for example, a touchdown can be scored in such and such ways and counts six points can appear sometimes as a rule, sometimes as an analytic truth; and that it can be construed as a tautology is a clue to the fact that the rule in question is a constitutive one.

(TEX) PORTADOR - CIRC - ROL

7. Regulative rules generally have the form "Do X" or "If Y do X".

POSEEDOR

8. Some members of the set of constitutive rules have this form but some also have the form "X counts as Y".

POSEEDOR

<8>

1. The failure to perceive this is of some importance in philosophy.

PORTADOR - ADSCRIPTIVO

2. Thus, e.g., some philosophers ask "How can a promise create an obligation?".

TEX TEX

EMISOR

3. A similar question would be "How can a touchdown create six points?".

IDENTIFICADO

4. And as they stand both questions can only be answered by stating a rule of the form "X counts as Y".

TEX CIRC - MANERA

<9>

1. I am inclined to think that both the failure of some philosophers to state rules for the use of expressions and the scepticism of other philosophers concerning the existence or any such rules stem at least in part from a failure to recognize the distinctyions between constitutive and regulative rules.

INTERPERS

PORTADOR - CIRC - ORIGEN

2. The model or paradigm of a rule which most philosophers have is that of a regulative rule, and if one looks in semantics for purely regulative rules one is not likely to find anything interesting from the point of view of logical analysis.

IDENTIFICADO

3. There are no doubt social rules of the form "One ought not to utter obscenities at formal gatherings" but that hardly seems a rule of the sort that is crucial in explicating the semantics of a language.

EXISTENTE

4. The hypothesis that lies behind the present paper is that the semantics of a language can be regarded as a series of systems of constitutive rules and that illocutionary acts are acts performed in accordance with these sets of constitutive rules.

IDENTIFICADO

5. One of the aims of this paper is to formulate a set of constitutive rules for a certain kind of speech act.

O.T.

IDENTIFICADO

6. And if what I have said concerning constitutive rules is correct, we should not be surprised if not all these rules take the form of imperative rules.

TEX

CIRC - CONDICION

7. Indeed we shall see that the rules fall into several different categories, none of which is quite like the rules of etiquette.

EXPERIMENTADOR - COGNITIVO

8. The effort to state the rules for an illocutionary act can also be regarded as a kind of test of the hypothesis that there are constitutive rules underlying speech acts.

PORTADOR-ADSCRIPTIVO

9. If we are unable to give any satisfactory rule formulations, our failure could be construed as partially disconfirming evidence against the hypothesis.

CIRC - CONDICION

PROPOSITIONS

<10>

1. Different illocutionary acts often have features in common with each other.

POSEEDOR

2. Consider utterances of the following sentences:

PROCESO COGNITIVO

3. Utterances of each of these on a given occasion would characteristically be performances of different illocutionary acts.

PORTADOR - ADSCRIPTIVO

4. The first would, characteristically, be a question, the second an assertion about the future, that is, a prediction, the third a request or order, the fourth an expression of a wish, and the fifth a hypothetical expression of intention.

PORTADOR - ADSCRIPTIVO

5. Yet in the performance of each the speaker would characteristically perform some subsidiary acts which are common to all five illocutionary acts.

TEX CIRC - TIEMPO

6. In the utterance of each the speaker refers to a particular person John and predicates the act of leaving the room of that person.

CIRC - TIEMPO

7. In no case is that all he does, but in every case it is a part of what he does.

CIRC-LUGAR

8. I shall say, therefore, that in each of these cases, although the illocutionary acts are different, at least some of the non-illocutionary acts of reference and predication are the same.

INTERPERS TEX CIRC-LUGAR

<11>

1. The reference to some person John and predication of the same thing of him in each of these illocutionary acts inclines me to say that there is a common content in each of them.

CAUSANTE - LOCUTIVO

2. Something expressible by the clause "that John will leave the room" seems to be a common feature of all.

PORTADOR - ADSCRIPTIVO

3. We could, with not too much distortion, write each of these sentences in a way which would isolate this common feature: "I assert that John will leave the room", "I ask whether John will leave the room", etc.

EMISOR COMO AGENTE

<12>

1. For lack of a better word I propose to call this common content a proposition, and I shall describe this feature of these illocutionary acts by saying that in the utterance of each of (1)-(5) the speaker expresses the proposition that John will leave the room.

CIRC - CAUSA

2. Notice that I do not say that the sentence expresses the proposition; I do not know how sentences could perform acts of that kind.

INTERPERS

INTERPERS

EMISOR COMO AGENTE

3. But I shall say that in the utterance of the sentence the speaker expresses a proposition.

TEX

INTERPERS

CIRC - TIEMPO

4. Notice also that I am distinguishing between a proposition and an assertion or statement of that proposition.

INTERPERS TEX AGENTE

5. The proposition that John will leave the room is expressed in the utterance of all of (1)-(5) but only in (2) is that proposition asserted.

EMITIDO

<13>

1. I might summarise this by saying that I am distinguishing between the illocutionary act and the propositional content of an illocutionary act.

O.T. EMISOR

2. Of course, not all illocutionary acts have a propositional content, for example, an utterance of "Hurrah!" or "Ouch!" does not.

INTERPERS

POSEEDOR

3. In one version or another this distinction is an old one and has been marked in different ways by authors as diverse as Frege, Sheffer, Lewis, Reichenbach and Hare, to mention only a few.

CIRC - LUGAR

<14>

1. From a semantical point of view we can distinguish between the propositional indicator in the sentence and the indicator of illocutionary force.

CIRC - PUNTO DE VISTA

2. That is, for a large class of sentences used to perform illocutionary acts, we can say for the purpose of our analysis that the sentence has two (not necessarily separate) parts, the proposition indicating element and the function indicating device.

TEX

CIRC - TEMATICA

3. The function indicating device shows how the proposition is to be taken, or, to put it in another way, what illocutionary force the utterance is to have, that is, what illocutionary act the speaker is performing in the utterance of the sentence.

CAUSANTE - PROCESO COGNITIVO

4. Function indicating devices in English include word order, stress, intonation contour, punctuation, the mood of the verb, and finally a set of so-called performative verbs:

IDENTIFICADO

5. I may indicate the kind of illocutionary act I am performing by beginning the sentence with "I apologize", "I warn", "I state" etc.

EMISOR COMO AGENTE

6. Often in actual speech situations the context will make it clear what the illocutionary force of the utterance is, without its being necessary to invoke the appropriate function indicating device.

INTERPERS

CIRC - LUGAR

<15>

1. If this semantical distinction is of any real importance, it seems likely that it should have some syntactical analogue, and certain recent developments in transformational grammar tend to support the view that it does.

CIRC - CONDICION

2. In the underlying phrase marker of a sentence there is a distinction between those elements which correspond to the function indicating device and those which correspond to the propositional content.

CIRC - LUGAR

<16>

1. The distinction between the function indicating device and the proposition indicating device will prove very useful to us in giving an analysis of an illocutionary act.

PORTADOR - ADSCRIPTIVO

2. Since the same proposition can be common to all sorts of illocutionary acts, we can separate our analysis of the proposition from our analysis of kinds of illocutionary acts.

CIRC - CAUSA

3. I think there are rules for expressing propositions, rules for such things as reference and predication, but those rules can be discussed independently of the rules for function indicating.

INTERPERS EXISTENTE

4. In this paper I shall not attempt to discuss propositional rules but shall concentrate on rules for using certain kinds of function indicating devices.

O.T. CIRC-LUGAR (TEX)

MEANING

<17>

1. Speech acts are characteristically performed in the utterance of sounds or the making of marks.

OBJETIVO

2. What is the difference between just uttering sounds or making marks and performing a speech act?

IDENTIFICADO

3. One difference is that the sounds or marks one makes in the performance of a speech act are characteristically said to have meaning, and a second related difference is that one is characteristically said to mean something by those sounds or marks.

IDENTIFICADO

4. Characteristically when one speaks one means something by what one says, and what one says, the string of morphemes that one emits, is characteristically said to have a meaning.

INTERPERS

CIRC - TIEMPO

5. Here, incidentally, is another point at which our analogy between performing speech acts and playing games breaks down.

CIRC - LUGAR

6. The pieces in a game like chess are not characteristically said to have a meaning, and furthermore when one makes a move one is not characteristically said to mean anything by that move.

POSEEDOR

<18>

1. But what is it for one to mean something by what one says, and what is it for something to have a meaning?

TEX IDENTIFICADO

2. To answer the first of these questions I propose to borrow and revise some ideas of Paul Grice.

CIRC - FINALIDAD

3. In an article entitled "Meaning", Grice gives the following analysis of one sense of the notion of "meaning".

CIRC - LUGAR

4. To say that A meant something by x is to say that "A intended the utterance of x to produce some effect in an audience by means of the recognition of this intention".

IDENTIFICADO

5. This seems to me a useful start on an analysis of meaning, first because it shows the close relationship between the notion of meaning and the notion of intention, and secondly because it captures something which is, I think, essential to speaking a language:

PORTADOR - ADSCRIPTIVO

6. In speaking a language I attempt to communicate things to my hearer by means of getting him to recognize my intention to communicate just those things.

CIRC - TIEMPO

7. For example, characteristically, when I make an assertion, I attempt to communicate to and convince my hearer of the truth of a certain proposition; and the means I employ to do this are to utter certain sounds, which utterance I intend to produce in him the desired effect by means of his recognition of my intention to produce just that effect.

TEX

INTERPERS

CIRC - TIEMPO

8. I shall illustrate this with an example.

O.T. EMISOR COMO AGENTE

9. I might on the one hand attempt to get you to believe that I am French by speaking French all the time, dressing in the French manner, showing wild enthusiasm for de Gaulle, and cultivating French acquaintances.

CAUSANTE - PROCESO COGNITIVO

10. But I might on the other hand attempt to get you to believe that I am French by simply telling you that I am French.

TEX CAUSANTE - PROCESO COGNITIVO

11. Now, what is the difference between these two ways of my attempting to get you to believe that I am French?

TEX IDENTIFICADO

12. One crucial difference is that in the second case I attempt to get you to believe that I am French by getting you to recognize that it is my purported intention to get you to believe just that.

IDENTIFICADO

13. That is one of the things involved in telling you that I am French.

IDENTIFICADO

14. But of course if I try to get you to believe that I am French by putting on the act I described, then your recognition of my intention to produce in you the belief that I am French is not the means I am employing.

TEX INTERPERS CIRC - CONDICION

15. Indeed in this case you would, I think, become rather suspicious if you recognized my intention.

TEX CIRC-LUGAR

<19>

1. However valuable this analysis of meaning is, it seems to me to be in certain respects defective.

CIRC - CONCESION

2. First of all, it fails to distinguish the different kinds of effects -perlocutionary versus illocutionary- that one may intend to produce in one's hearer, and it further fails to show the way in which these different kinds of effects are related to the notion of meaning.

TEX AGENTE

3. The point of the counter-example will be to illustrate the connection between what a speaker means and what the words he utters mean.

IDENTIFICADO

<20>

1. Suppose that I am an American soldier in the Second World War and that I am captured by Italian troops.

INTERPERS PORTADOR - ADSCRIPTIVO

2. And suppose also that I wish to get these troops to believe that I am a German officer in order to get them to release me.

TEX INTERPERS TEX EXPERIMENTADOR - AFECTIVO

3. What I would like to do is to tell them in German or Italian that I am a German officer.

IDENTIFICADO

4. But let us suppose I don't know enough German or Italian to do that.

TEX INTERPERS EXPERIMENTADOR - COGNITIVO

5. So I, as it were, attempt to put on a show of telling them that I am a German officer by reciting those few bits of German that I know, trusting that they don't know enough German to see through my plan.

TEX AGENTE

6. Let us suppose I know only one line of German, which I remember from a poem I had to memorize in a high school German course.

INTERPERS EXPERIMENTADOR - COGNITIVO

7. Therefore I, a captured American, address my Italian captors with the following sentence: "Kennst du das Land, wo die Zitronen blühen?"

TEX EMISOR COMO AGENTE

8. Now, let us describe the situation in Gricean terms.

TEX PROCESO LOCUTIVO

9. I intend to produce a certain effect in them, namely, the effect of believing that I am a German officer; and I intend to produce this effect by means of their recognition of my intention.

EXPERIMENTADOR - COGNITIVO

10. I intend that they should think that what I am trying to tell them is that I am a German officer.

EXPERIMENTADOR - COGNITIVO

11. But does it follow from this account that when I say "Kennst du das Land..." etc., what I mean is, "I am a German officer?"

TEX PROCESO MATERIAL COMO EVALUACION

12. Not only does it not follow, but in this case it seems plainly false that when I utter the German sentence what I mean is "I am a German officer", or even "Ich bin ein deutscher Offizier", because what the words mean is, "Knowest thou the land where the lemon trees bloom?"

TEX PROCESO MATERIAL COMO EVALUACION

13. Of course, I want my captors to be deceived into thinking that what I mean is "I am a German officer", but part of what is involved in the deception is getting them to think that that is what the words which I utter mean in German.

INTERPERS EXPERIMENTADOR - AFECTIVO

14. At one point in the Philosophical Investigations Wittgenstein says "Say 'it's cold here' and mean 'it's warm here'".

CIRC - LUGAR

15. The reason we are unable to do this is that what we can mean is a function of what we are saying.

IDENTIFICADO

16. Meaning is more than a matter of intention, it is also a matter of convention.

PORTADOR - ADSCRIPTIVO

<21>

1. Grice's account can be amended to deal with counter-examples of this kind.

OBJETIVO

2. We have here a case where I am trying to produce a certain effect by means of the recognition of my intention to produce that effect, but the device I use to produce this effect is one which is conventionally, by the rules governing the use of that device, used as a means of producing quite different illocutionary effects.

TEX EXISTENTE

3. We must therefore reformulate the Gricean account of meaning in such a way as to make it clear that one's meaning something when one says something is more than just contingently related to what the sentence means in the language one is speaking.

AGENTE

4. In our analysis of illocutionary acts the speaker intends to produce a certain effect by means of getting the hearer to recognize his intention to produce that effect, and furthermore, if he is using words literally, he intends this recognition to be achieved in virtue of the fact that the rules for using the expressions he utters associate the expressions with the production of that effect.

CIRC - LUGAR

5. It is this combination of elements which we shall need to express in our analysis of the illocutionary act.

IDENTIFICADO

HOW TO PROMISE

<22>

1. I shall now attempt to give an analysis of the illocutionary act of promising.

O.T. EMISOR

2. In order to do this I shall ask what conditions are necessary and sufficient for the act of promising to have been performed in the utterance of a given sentence.

O.T. CIRC - FINALIDAD

3. I shall attempt to answer this question by stating these conditions as a set of propositions such that the conjunction of the members of the set entails the proposition that a speaker made a promise, and the proposition that the speaker made a promise entails this conjunction.

O.T. EMISOR

4. Thus each condition will be a necessary condition for the performance of the act of promising, and taken collectively the set of conditions will be a sufficient condition for the act to have been performed.

TEX PORTADOR - ADSCRIPTIVO

<23>

1. If we get such a set of conditions we can extract from them a set of rules for the use of the function indicating device.

CIRC - CONDICION

2. The method here is analogous to discovering the rules of chess by asking oneself what are the necessary and sufficient conditions under which one can be said to have correctly moved a knight or castle or check-mated a player, etc.

PORTADOR - CIRC - COMPARACION

3. We are in the position of someone who has learned to play chess without ever having the rules formulated and who wants such a formulation.

PORTADOR - CIRC - LUGAR

4. We learned how to play the game of illocutionary acts, but in general it was done without an explicit formulation of the rules, and the first step in getting such a formulation is to set out the conditions for the performance of a particular illocutionary act.

AGENTE

5. Our inquiry will therefore serve a double philosophical purpose.

AGENTE

6. By stating a set of conditions for the performance of a particular illocutionary act we shall have offered a partial explication of that notion and shall also have paved the way for the second step, the formulation of the rules.

CIRC - MEDIO

<24>

1. I find the statement of the conditions very difficult to do, and I am not entirely satisfied with the list I am about to present.

EXPERIMENTADOR - PROCESO COGNITIVO

2. One reason for the difficulty is that the notion of a promise, like most notions in ordinary language, does not have absolutely strict rules.

IDENTIFICADO

3. There are all sorts of odd, deviant, and borderline promises; and counter-examples, more or less bizarre, can be produced against my analysis.

EXISTENTE

4. I am inclined to think we shall not be able to get a set of knock down necessary and sufficient conditions that will exactly mirror the ordinary use of the word "promise".

INTERPERS

AGENTE

5. I am confining my discussion, therefore, to the centre of the concept of promising and ignoring the fringe, borderline, and partially defective cases.

O.T.AGENTE

6. I also confine my discussion to fullblown explicit promises

and ignore promises made by elliptical turns of phrase, hints, metaphors, etc.

O.T. AGENTE

<25>

1. Another difficulty arises from my desire to state the conditions without certain forms of circularity.

PORTADOR - CIRC - PROCEDENCIA

2. I want to give a list of conditions for the performance of a certain illocutionary act, which do not themselves mention the performance of any illocutionary acts.

O.T. EXPERIMENTADOR - AFECTIVO

3. I need to satisfy this condition in order to offer an explication of the notion of an illocutionary act in general, otherwise I should simply be showing the relation between different illocutionary acts.

EXPERIMENTADOR - AFECTIVO

4. However, although there will be no reference to illocutionary acts, certain illocutionary concepts will appear in the analysans as well as in the analysandum; and I think this form of circularity is unavoidable because of the nature of constitutive rules.

TEX

CIRC - CONCESION

<26>

1. In the presentation of the conditions I shall first consider the case of a sincere promise and then show how to modify the conditions to allow for insincere promises.

O.T. CIRC - LUGAR

2. As our inquiry is semantical rather than syntactical, I shall simply assume the existence of grammatically well-formed sentences.

CIRC - CAUSA

<27>

1. Given that a speaker S utters a sentence T in the presence of a hearer H, then, in the utterance of T, S sincerely (and non-defectively) promises that p to H if and only if:

(1) Normal Input and Output Conditions obtain.

CIRC - CONDICION

<28>

1. I use the terms "input" and "output" to cover the large and indefinite range of conditions under which any kind of serious linguistic communication is possible.

AGENTE COMO EMISOR

2. "Output" covers the conditions for intelligible speaking and "input" covers the conditions for understanding.

IDENTIFICADO

3. Together they include such things as that the speaker and hearer both know how to speak the language; both are conscious of what they are doing; the speaker is not acting under duress or threats; they have no physical impediments to communication, such as deafness, aphasia, or laryngitis; they are not acting in a play or telling jokes, etc.

POSEEDOR

(2) S expresses that p in the utterance of T.

<29>

1. This condition isolates the propositional content from the rest of the speech act and enables us to concentrate on the peculiarities of promising in the rest of the analysis.

AGENTE

(3) In expressing that p, S predicates a future act A of S.

<30>

1. In the case of promising the function indicating device is an expression whose scope includes certain features of the proposition.

CIRC - TEMATICA

2. In a promise an act must be predicated of the speaker and it cannot be a past act.

CIRC - LUGAR

3. I cannot promise to have done something, and I cannot promise that someone else will do something.

EMISOR COMO AGENTE

4. (Although I can promise to see that he will do it).

TEX EMISOR COMO AGENTE

5. The notion of an act, as I am construing it for present purposes, includes refraining from acts, performing series of acts, and may also include states and conditions: I may promise not to do something, I may promise to do something repeatedly, and I may promise to be or remain in certain state or condition.

POSEEDOR

6. I call conditions (2) and (3) the propositional content conditions.

EMISOR COMO AGENTE

(4) H would prefer S's doing A to his not doing A, and S believes H would prefer his doing A to his not doing A.

<31>

1. One crucial distinction between promises on the one hand and threats on the other is that a promise is a pledge to do something for you, not to you, but a threat is a pledge to do something to you, not for you.

IDENTIFICADO

2. A promise is defective if the thing promised is something the promisee does not want done; and it is further defective if the promisor does not believe the promisee wants it done, since a non-defective promise must be intended as a promise and not as a threat or warning.

PORTADOR - ADSCRIPTIVO

3. I think both halves of this double condition are necessary in order to avoid fairly obvious counter-examples.

INTERPERS PORTADOR - ADSCRIPTIVO

<32>

1. One can, however, think of apparent counter-examples to this condition as stated.

EXPERIMENTADOR - COGNITIVO

2. Suppose I say to a lazy student "If you don't hand in your paper on time I promise you I will give you a failing grade in the course".

INTERPERS EMISOR COMO AGENTE

3. Is this utterance a promise?

PORTADOR - ADSCRIPTIVO

4. I am inclined to think not; we would more naturally describe it as a warning or possibly even a threat.

EXPERIMENTADOR - COGNITIVO

5. But why then is it possible to use the locution "I promise" in such a case?

TEX CIRC - CAUSA

6. I think we use it here because "I promise" and "I hereby promise" are among the strongest function indicating devices for commitment provided by the English language.

INTERPERS EMISOR COMO AGENTE

7. For that reason we often use these expressions in the performance of speech acts which are not strictly speaking promises but in which we wish to emphasize our commitment.

CIRC - CAUSA

8. To illustrate this, consider another apparent counter-example to the analysis along different lines.

CIRC - FINALIDAD

9. Sometimes, more commonly I think in the United States than in England, one hears people say "I promise" when making an emphatic assertion.

INTERPERS

CIRC - LUGAR

10. Suppose, for example, I accuse you of having stolen the money.

INTERPERS

TEX

EMISOR COMO AGENTE

11. I say, "You stole that money, didn't you?"
EMISOR COMO AGENTE

12. You reply "No, I didn't, I promise you I didn't".
EMISOR COMO AGENTE

13. Did you make a promise in this case?
EMISOR COMO AGENTE

14. I find it very unnatural to describe your utterance as a
promise.
INTERPERS EVALUACION

15. This utterance would be more aptly described as an emphatic
denial, and we can explain the occurrence of the function
indicating device "I promise" as derivative from genuine promises
and serving here as an expression adding emphasis to your denial.
PORTADOR - ADSCRIPTIVO

<33>

1. In general the point stated in condition (4) is that if a
purported promise is to be non-defective the thing promised must
be something the hearer wants done, or considers to be in his
interest, or would prefer being done to not being done, etc.; and
the speaker must be aware of or believe or know, etc, that this
is the case.
INTERPERS IDENTIFICADO

2. I think a more elegant and exact formulation of this condition
would require the introduction of technical terminology.
INTERPERS POSEEDOR

(5) It is not obvious to both S and H that S will do A in the
normal course of events.

<34>

1. This condition is an instance of a general condition on many
different kinds of illocutionary acts to the effect that the act
must have a point.
PORTADOR - ADSCRIPTIVO

2. For example, if I make a request to someone to do something
which it is obvious that he is already doing or is about to do,
then my request is pointless and to that extent defective.
TEX CIRC - CONDICION

3. In an actual speech situation, listeners, knowing the rules
for performing illocutionary acts, will assume that this
condition is satisfied.
CIRC - LUGAR

4. Suppose, for example, that in the course of a public speech I
say to a member of my audience "Look here, Smith, pay attention
to what I am saying".
INTERPERS TEX CIRC - TIEMPO

5. In order to make sense of this utterance the audience will have to assume that Smith has not been paying attention or at any rate that it is not obvious that he has been paying attention, that the question of his paying attention has arisen in some way; because a condition for making a request is that it is not obvious that the hearer is doing or about to do the thing requested.

CIRC - FINALIDAD

<35>

1. Similarly with promises.

CIRC - COMPARACION

2. It is out of order for me to promise to do something that it is obvious I am going to do anyhow.

EVALUACION

3. If I do seem to be making such a promise, the only way my audience can make sense of my utterance is to assume that I believe that it is not obvious that I am going to do the thing promised.

CIRC - CONDICION

4. A happily married man who promises his wife he will not desert her in the next week is likely to provide more anxiety than comfort.

AGENTE

<36>

1. Parenthetically I think this condition is an instance of the sort of phenomenon stated in Zipf's law.

TEX INTERPERS PORTADOR - ADSCRIPTIVO

2. I think there is operating in our language, as in most forms of human behaviour, a principle of least effort; and I think condition (5) is an instance of it.

INTERPERS

CIRC - LUGAR

<37>

1. I call conditions such as (4) and (5) preparatory conditions.

EMISOR COMO AGENTE

2. They are sine quibus non of happy promising, but they do not yet state the essential feature.

PORTADOR - ADSCRIPTIVO

(6) S intends to do A.

<38>

1. The most important distinction between sincere and insincere promises is that in the case of the sincere promise the speaker intends to do the act promised, in the case of the insincere promise he does not intend to do the act.

IDENTIFICADO

2. Also in sincere promises the speaker believes it is possible for him to do the act (or to refrain from doing it), but I think the proposition that he intends to do it entails that he thinks it is possible to do (or refrain from doing) it, so I am not stating that as an extra condition.

TEX CIRC - LUGAR

3. I call this condition the sincerity condition.
EMISOR COMO AGENTE

(7) S intends that the utterance of T will place him under an obligation to do A.

<39>

1. The essential feature of a promise is that it is the undertaking of an obligation to perform a certain act.

IDENTIFICADO

2. I think that this condition distinguishes promises (and other members of the same family such as vows) from other kinds of speech acts.

INTERPERS AGENTE

3. Notice that in the statement of the condition we only specify the speaker's intention; further conditions will make clear how that intention is realized.

INTERPERS CIRC - LUGAR

4. It is clear, however, that having this intention is a necessary condition of making a promise; for if a speaker can demonstrate that he did not have this intention in a given utterance, he can prove that the utterance was not a promise.

INTERPERS TEX PORTADOR - ADSCRIPTIVO

5. We know, for example, that Mr. Pickwick did not promise to marry the woman because we know he did not have the appropriate intention.

INTERPERS TEX EMISOR COMO AGENTE

<40>

1. I call this the essential condition.

EMISOR COMO AGENTE

(8) S intends that the utterance of T will produce in H a belief that conditions (6) and (7) obtain by means of the recognition of the intention to produce that belief, and he intends this recognition to be achieved by means of the recognition of the sentence as one conventionally used to produce such beliefs.

<41>

1. This captures our amended Gricean analysis of what it is for the speaker to mean to make a promise.

AGENTE COMO POSEEDOR

2. The speaker intends to produce a certain illocutionary effect by means of getting the hearer to recognize his intention to produce that effect, and he also intends this recognition to be achieved in virtue of the fact that the lexical and syntactical character of the item he utters conventionally associates it with producing that effect.

EXPERIMENTADOR-AFECTIVO

<42>

1. Strictly speaking this condition could be formulated as part of condition (1), but it is of enough philosophical interest to be worth stating separately.

TEX OBJETIVO

2. I find it troublesome for the following reason.

EXPERIMENTADOR - COGNITIVO

3. If my original objection to Grice is really valid, then surely, one might say, all these iterated intentions are superfluous; all that is necessary is that the speaker should seriously utter a sentence.

CIRC - CONDICION

4. The production of all these effects is simply a consequence of the hearer's knowledge of what the sentence means, which in turn is a consequence of his knowledge of the language, which is assumed by the speaker at the outset.

PORTADOR - ADSCRIPTIVO

5. I think the correct reply to this objection is that condition (8) explicates what it is for the speaker to "seriously" utter the sentence, i.e. to utter it and mean it, but I am not completely confident about either the force of the objection or of the reply.

INTERPERS IDENTIFICADO

(9) The semantical rules of the dialect spoken by S and H are such that T is correctly and sincerely uttered if and only if conditions (1)-(8) obtain.

<43>

1. This condition is intended to make clear that the sentence uttered is one which by the semantical rules of the language is used to make a promise.

PORTADOR - CIRC - FINALIDAD

2. Taken together with condition (8), it eliminates counter-examples like the captured soldier example considered earlier.

CIRC - TIEMPO

3. Exactly what the formulation of the rules, is, we shall soon see.

FENOMENO - PERCEPTIVO

<44>

1. So far we have considered only the case of a sincere promise.
O.T. CIRC LUGAR (TEX)

2. But insincere promises are promises nonetheless, and we now need to show how to modify the conditions to allow for them.
TEX PORTADOR - ADSCRIPTIVO

3. In making an insincere promise the speaker does not have all the intentions and beliefs he has when making a sincere promise.
CIRC - TIEMPO

4. However, he purports to have them.
TEX AGENTE

5. Indeed it is because he purports to have intentions and beliefs which he does not have that we describe his act as insincere.
TEX CIRC - CAUSA

6. So to allow for insincere promises we need only to revise our conditions to state that the speaker takes responsibility for having the beliefs and intentions rather than stating that he actually has them.
TEX CIRC - FINALIDAD

7. A clue that the speaker does take such responsibility is the fact that he could not say without absurdity, e.g. "I promise to do A but I do not intend to do A".
IDENTIFICADO

8. To say "I promise to do A" is to take responsibility for intending to do A, and this condition holds whether the utterance was sincere or insincere.
IDENTIFICADO

9. To allow for the possibility of an insincere promise then we have only to revise condition (6) so that it states not that the speaker intends to do A, but that he takes responsibility for intending to do A, and to avoid the charge of circularity I shall phrase this as follows:

(6*) S intends that the utterance of T will make him responsible for intending to do A.
CIRC - FINALIDAD

<45>

1. Thus amended (and with "sincerely" dropped from our analysandum and from condition (9)), our analysis is neutral on the question whether the promise was sincere or insincere.
PORTADOR - ADSCRIPTIVO

RULES FOR THE USE OF THE FUNCTION INDICATING DEVICE

<46>

1. Our next task is to extract from our set of conditions a set of rules for the use of the function indicating device.

O.T. IDENTIFICADO

2. Obviously not all of our conditions are equally relevant to this task.

INTERPERS PORTADOR - ADSCRIPTIVO

3. Condition (1) and conditions of the forms (8) and (9) apply generally to all kinds of normal illocutionary acts and are not peculiar to promising.

PORTADOR - CIRC - DESTINATARIO???

4. Rules for the function indicating device for promising are to be found corresponding to conditions (2)-(7).

EXISTENTE

<47>

1. The semantical rules for the use of any function indicating device P for promising are:

Rule 1. P is to be uttered only in the context of a sentence (or larger stretch of discourse) the utterance of which predicates some future act A of the speaker S.

IDENTIFICADO

2. I call this the propositional content rule.

EMISOR COMO AGENTE

3. It is derived from the propositional content conditions (2) and (3).

OBJETIVO

Rule 2. P is to be uttered only if the hearer H would prefer S's doing A to his not doing A, and S believes H would prefer S's doing A to his not doing A.

Rule 3. P is to be uttered only if it is not obvious to both S and H that S will do A in the normal course of events.

4. I call rules (2) and (3) preparatory rules.

EMISOR COMO AGENTE

5. They are derived from the preparatory conditions (4) and (5).

OBJETIVO

Rule 4. P is to be uttered only if S intends to do A.

6. I call this the sincerity rule.

EMISOR COMO AGENTE

7. It is derived from the sincerity condition (6).

OBJETIVO

Rule 5. The utterance of P counts as the undertaking of an obligation to do A.

8. I call this the essential rule.
EMISOR COMO AGENTE

<48>

1. These rules are ordered; Rules 2-3 apply only if Rule 1 is satisfied, and Rule 5 applies only if Rules 2 and 3 are satisfied as well.

PORTADOR - ADSCSCRIPTIVO

<49>

1. Notice that whereas rules 1-4 take the form of quasi-imperatives, i.e. they are of the form: utter P only if x, rule 5 is of the form: the utterance of P counts as Y.

INTERPERS

CIRC - CONCESION

2. Thus rule 5 is of the kind peculiar to systems of constitutive rules which I discussed in section II.

TEX PORTADOR - ADSCRIPTIVO

<50>

1. Notice also that the rather tiresome analogy with games is holding up remarkably well.

INTERPERS TEX

AGENTE COMO PORTADOR - ADSCRIPTIVO

2. If we ask ourselves under what conditions a player could be said to move a knight correctly, we would find preparatory conditions, such as that it must be his turn to move, as well as the essential condition stating the actual positions the knight can move to.

CIRC - CONDICION

3. I think that there is even a sincerity rule for competitive games, the rule that each side tries to win.

INTERPERS

EXISTENTE

4. I suggest that the team which "throws" the game is behaving in a way closely analogous to the speaker who lies or makes false promises.

INTERPERS

AGENTE

5. Of course, there usually are no propositional content rules for games, because games do not, by and large, represent states of affairs.

INTERPERS

INTERPERS

EXISTENTE

<51>

1. If this analysis is of any general interest beyond the case of promising then it would seem that these distinctions should carry over into other types of speech act, and I think a little reflection will show that they do.

CIRC - CONDICION

2. Consider, e.g., giving an order.

PROCESO COGNITIVO

3. The preparatory conditions include that the speaker should be in a position of authority over the hearer, the sincerity condition is that the speaker wants the ordered act done, and the essential condition has to do with the fact that the utterance is an attempt to get the hearer to do it.

POSEEDOR

4. For assertions, the preparatory conditions include de fact tha the hearer must have some basis for supposing the asserted proposition is true, the sincerity condition is that he must believe it to be true, and the essential condition has to do with the fact that the utterance is an attempt to inform the hearer and convince him of its truth.

CIRC - TEMATICA

5. Greetings are a much simpler kind of speech act, but even here some of distinctions apply.

PORTADOR - ADSCSCRIPTIVO

6. In the utterance of "Hello" there is no propositional content and no sincerity condition.

CIRC - LUGAR

7. The preparatory condition is that the speaker must have just encountered the hearer, and the essential rule is that the utterance indicates courteous recognition of the hearer.

IDENTIFICADO

<52>

1. A proposal for further research then is to carry out a similar analysis of other types of speech acts.

IDENTIFICADO

2. Not only would this give us an analysis of concepts interesting in themselves, but the comparison of different analyses would deepen our understanding of the whole subject and incidentally provide a basis for a more serious taxonomy than any of the usual facile categories such as evaluative versus descriptive, or cognitive versus emotive.

TEX

AGENTE