

**A SOCIOSEMANTIC ANALYSIS
of adolescents' self-perception patterns
in four secondary schools in Spain.**

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For my parents

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Abstract

The research focuses on the analysis of the self-perception patterns present among Spanish adolescents. The investigation of this topic is carried out by means of the development of a methodology adequate to deal with the shortcomings of existing approaches. The theoretic approach consists in the consideration of those adolescents —thirteen and fourteen years old students— as autonomous social agents who define their own personal strategies in a dynamic of interactions with their environment.

This view of students as autonomous social agents is refined through the concept of a **self-perception system** which draws on some basic notions of systems thinking and cybernetics. Some self-perception systems show similarities which indicate the presence of distinct self-perception patterns. The detection and characterization of those patterns is the main aim of this research.

The empirical basis of the research is provided by essays written by 116 students belonging to four state schools in Madrid. Those schools are located in four different socio-economic areas of that city. The common topic of the essays was "*How do you see your life as a youngster, as a middle age person and as an elderly person?*". The analysis of the conceptual content of those essays produces the specific concepts used by each individual. These data are then processed by means of a methodology called **socio-semantic analysis**, which combines Q-analysis and Multidimensional Scaling. The outcome of this methodology is a set of socio-semantic maps in which concepts and individuals appear located according to their socio-semantic distances. The interpretation of those maps allows for abstract different **patterns of self-perception** in the sample: profession centred pattern, a family centred pattern and a dual or conflictive pattern, which is characteristic of some girls.

The sociological significance of the notion of self-perception patterns stems from the fact that the considerations of the specific patterns that are at work in a given social environment —in this case an educational environment— may be instrumental in explaining the behaviour of the agents acting within those environments.

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Introduction

Many social scientists concerned with making educational systems and practices more effective have argued for a considerable period of time that making the school more efficient means that it must correspond more to what and how pupils think (from John Dewey and Paulo Freire to Edwards and Mercer or Jimeno Sacristán). They have largely focussed their attention on social class then subsequently ethnic and gender differences as important elements in explaining the area of educational success and failure. One of the underlying assumptions of the above mentioned line of research has been that such differences result in distinct types of attitudes among students towards the school in particular and educational processes in general. It can be argued that the presence of those different types of attitudes among students is an important component to be considered when dealing with the improvement of the effectiveness of education. However, attitudes have tended to be defined in a narrow sense which does not include, as more recent writers like Gambetta (1987) have pointed out, pupil intentions.

In part, my starting point is to suggest that we must look at students as what I will call autonomous social agents who define their strategies towards the educational process according to their personal expectations. But before looking at the students relationship to the educational process, and in order to clarify that relationship, we must understand more thoroughly their own self-perceptions.

Students only become personally involved in the education process inasmuch as they feel themselves self-referenced in that process: in so far as they are able to make sense out of such a process by relating it to their own personal worlds of meanings. These personal worlds of meanings make up complex systems of conceptual and attitudinal contents, which I call self-perception systems. A self-perception system constitutes the horizon of

personal relevance which allow individuals to organize their action as autonomous social agents¹. I will argue that self-perception systems are not merely psychological realities; they are intrinsically psycho-social in nature, and define both the social world and the self presupposed by the actions of the individual.

Different types of self-perception systems among the students entail different ways of relating to the education process. The study of those specific kinds of self-perception systems, which I call self-perception patterns, may shed light upon the real environment of education, allowing a more discerning insight into many of the problems that our educational systems should confront nowadays. In fact, the investigation of the forms of self-perception through which the students connect to the education process might be at the basis of specific educational policies designed to improve and enhance the potential of modern education systems.

There has been much research related to this topic, both in sociology (Coleman, 1966; Bernstein, 1971, 1977; Holsey, 1973; Shipman, 1980; Tomlinson, 1984; Doyle and Paludi, 1991; and psychology (Havighurst 1953,1956,1972; Erickson,1968 Allport, 1955,1964; McGuire, 1984,1987; Simmons, 1987; Turner, 1987; Bem, 1967,1972; McCarthy,1988, etc.). My initial concern about the issue of self-perception patterns grew from empirical, conceptual and methodological problems.

1. The empirical background of this thesis goes back to 1983, when I carried out a small research (C.Díaz Martínez, 1983: 127-139) on the personal views of a group of 31 students aged 11 to 14, from Ponferrada (León province, Spain). The aim of the research was to find out the expectations of those adolescents, focussing on their work expectations and family life.

2. The conceptual issues faced by this thesis were prompted by a feeling of dissatisfaction regarding the way in which social sciences deal with the intentional dynamics of individual social actors. In the first and second chapters I briefly review the work that social scientists have undertaken concerning the area that for the moment I will call intentionality. I must point out that my purpose is not to present a harsh critique of their work, since it

represents only one area of their concerns. Only to take those elements of sometimes innovative and important theories which have led to the constitution of the social sciences and, indeed, allowed me and others to express our concerns, and to use them as stepping stones in the construction of a theory which can help us more adequately to deal with the problems I found in the light of my investigations in Spain. I will of course return to look at these theories in the light of my own empirical research in the conclusions, where I hope to again offer alternatives. I must however, insist that the social sciences, like the natural sciences, can only progress by dealing with problems and not with approaches. I hope that my contribution will be taken in that way and not, as is too often the case, a critique which throws the baby out with the bathwater.

3. The methodological problems grew from the need to find a bridge between the conceptual and empirical levels. Specifically I have tried to develop a methodology ('Sociosemantic Analysis') adequate to locate **self-perception systems** and reveal **self-perception patterns** in the data provided by empirical research. The implementation of that methodology has taken up a substantial part of my research effort.

In the course of this work I have been led to develop a number of concepts. Although these concepts will be explained fully through my description of my itinerary and as part of the development of my ideas I will offer their final definitions now as a guide to the reader:

Self-perception system: The coherent domain of cognitive and motivational schemata² through which individuals perceive themselves and the world, and act in that perceived world. Each individual develops a specific self-perception system.

Self-perception patterns: Ideal types of self-perception systems, which have a characteristic scheme of coherence, congruous arrangements of elements, which entail each other. Similar individual self-perception systems can be viewed as concrete realizations of a shared self-perception pattern.

Sociosemantic analysis: A technique to establish both the **semantic connectivities** (through shared concepts) between the individuals of a group,

and the social connectivities between those concepts (through the individuals who use them). The connectivities between individuals (through concepts) are interpreted as measures of the semantic similarity between those individuals, and the connectivities between concepts (through individuals) are interpreted as measures of the social similarity between those concepts.

The first chapter of this thesis considers the basic problem that faces modern education: the mismatch between the aims envisaged by current policies of universal education and the actual results of such policies, which clearly do not live up to those aims. Universal education, a well established reality in today's developed countries, is not working as the intended mechanism of social integration and improvement for a substantial portion of society. Underprivileged social groups seem unable to benefit efficiently from the educational resources offered to them, and even those policies designed to increase their access to such resources have only achieved a limited success. The causes of this state of affairs are many-sided. But one of these causes is the lack of a clear understanding of the ways in which different social groups relate their expectations and actions to the education process. The education system's inability to take into account the real subjective demands of those groups is one of the factors that hinders their performance in the educational environment. Thus, the study of those subjective demands, which arise from the characteristic self-perception systems of different groups of students, is a fundamental prerequisite for the design of education policies adequate to the complexity of our societies.

Chapter 2 provides the basic theoretic underpinnings of this thesis. It presents some general concepts, originated in some recent trends of systems thinking and cybernetics, which will be essential in order to substantiate the notion of 'self-perception system'. Concepts such as 'organizational closure', 'informational openness', 'reflectivity', etc., will allow a definite characterization of those psycho-social realities, both coherent and dynamic, that I call self-perception systems.

Chapter 3 builds on those theories. The concept of 'self-perception system' is measured against other related notions ('self-concept', 'self-reference', 'self-esteem', etc.), which are viewed as particular aspects of the

total self-perception system. Autonomy is an essential feature of self-perception systems, which, as individual human beings, are able to adapt—indeed they must—to their environment without loss of their coherence. Meaning is produced and reproduced by those systems through their history of interactions with other similar systems, which are also human beings. They are action systems as well as systems of meanings, and they mutually define their horizon of expectations as social subjects.

These three chapters make up the conceptual basis of the empirical research on which the specific sociological analysis of this thesis rests. This research, carried out on 13 year old students from four schools of Madrid, is described in Chapter 4. The initial data of the research were more than one hundred essays written by those students. The content of these essays was analyzed through a process also described in Chapter 4, in order to determine the concepts used by each student. Those individual sets of concepts are viewed as representing their specific self-perception systems.

The content analysis of the essays, as described in Chapter 4, provides a collection of data sets—the lists of the concepts used by each individual, and the lists of the individuals who use each concept—; these data sets are then processed through a technique which I call 'sociosemantic analysis'. Chapter 5 presents this technique and shows the results of its application to the data. By processing these data through the sociosemantic technique, they are reconstructed in the form of sociosemantic maps of concepts and individuals. The interpretation of such maps allows us to detect the presence of several 'patterns of self-perception' among the individuals of the sample. Three of these patterns become apparent: the 'family centred pattern', the 'profession centred pattern' and the 'dual patterns', which is typical of girls and combines features of the previous two.

Chapter 6, drawing on the insights provided by that previous sociosemantic analysis, presents a detailed interpretive analysis of the essays, in order to elaborate the characteristics of the three self-perception patterns, as well as their sociological implications. Finally, the short Chapter 7 highlights some of the consequences that the presence of those distinct self-perception models among students entail for education policies and practice.

NOTES TO THE INTRODUCTION

¹ "How a child sees himself and others makes all the difference in the world to what he actually is and may become" P.S: Wilson 1973: 160.

² A mental model of the self and the world.

Chapter 1

Socio-Educational Motivation as an Alternative between Compensatory Philosophy and Cultural Determinism

To precis this chapter, it can be said that "what underlies the complex of attitudes favourable to educational and social mobility" (Bernstein 1971: 23) has been the aim of many researches in sociology of education. Very often educational achievement has been related to social class, especially from 1960 onwards. Although, as Meighan (1986) pointed out, social class is a highly ambiguous concept, significant relations between educational attainment and social class have been established in research studies both in the United Kingdom and Spain —just to mention the two countries of reference of this research— (Lawton 1968, 1975; Davies *et al.* 1972; Fogelman 1975, 1983; Rutter and Madge 1976; Halsey *et al.* 1980; Motimore and Blackstone 1982; and Alcock 1987 among the British; Castillejo *et al.* 1985; Pérez Serrano 1981; and Muñoz-Repiso *et al.* 1992 among the Spanish). Subsequently looked at other groups and/or cohorts, gender, race, etc., neglecting the individual and her¹ motivation and what I will call their self-perception systems.

Many of the studies about the influence of social class, gender, race, type of family, type of school, peer groups, etc., have been non-conclusive and/or controversial, as a consequence when the output of formal education is not as high as expected each part involved in the education process (parents, teachers, students, education authorities, etc.) usually put the blame on the others as responsible for the poor results rather than questioning the model

implicit in their judgements (J.Simon 1974; Sharp and Green 1975; Whitty 1976).

Given the almost universal concentration on groups or cohorts it appeared to me a sensible idea to look closely at the theoretical model of the individual that most education studies have taken for granted, or avoided, and to look at it in relation to individuals' socio-educational motivation. In that respect the scrutiny of the self-perception systems of the students can be important. In order to do that I start with a critical review of the relevant literature on socio-educational motivation.

1.1. Universal education.

The idea of universal education or mass schooling, from its beginnings, has been a contradictory ideal. It was conceived of by the Enlightenment, as a fundamental part of its emancipatory dream², and it has been tentatively implemented over the last two centuries by capitalist and then by socialist societies —first in Europe and America, then in almost all other countries (Ramirez and Boli, 1987; Meyer *et al.* 1992). However, from the outset a characteristic form of doublethink has bedevilled the history of the relationship between the ideals and practices of universal education. In terms of its ideals it was envisaged as an instrument of social cohesion (Durkheim, Mauss, Dewey, Parsons,...)— even of social equality (the socialist thinkers and educationalists like Freinet, etc.). In terms of its practices, universal education, according to many researchers, has been used to reproduce inequality (Bourdieu, Bernstein, Bowles and Gintis³, Apple...). Hence it would mirror the main structural basis of social conflict in modern societies. In fact, it can be argued that universal education seems to play an essential role in generating the stratification of these societies which, although undergoing fundamental technological and social transformations, have remained deeply unequal and conflict-prone (M.F.D. Young 1971; B. Bernstein 1971).

Currently there is a mounting feeling of dissatisfaction provoked by the fact that universal education, as a generic ideal, does not seem to fulfill in an effective way the emancipatory role assigned to it by the Enlightenment's

great design (Adorno, Habermas⁴). The deficiencies of modern education systems in that respect have become increasingly clear. Universal education, seen as 'compulsory and free education', is a well established reality in today's developed societies; several generations of citizens in the main industrialized countries have already benefitted from some system of universal education⁵. And yet divisions and conflicts along class, gender, and ethnic lines, in both central and peripheral societies, persist and seem to be extraordinarily resistant to their treatment by educational means.

On the one hand, universal education arguably is the main instrument of social mobility and change in modern societies: for instance the substantial changes in the roles and status of women over this century would be inconceivable without referring to the phenomenon of feminine mass schooling (Ramírez and Cha 1990; Bradley and Ramírez 1991).

On the other hand, modern educational systems have revealed over the last decades their shortcomings as efficient instruments of the integration of underprivileged social groups into the mainstream of society—not to speak of effective equalization—. The increasing awareness of that fact, which became progressively clear during the long period of economic expansion that followed World War II, was a disturbing finding (Floud, 1956; Coleman, 1969; Halsey 1980). A worrying outcome of such finding was that the implicit doublethink underpinning the enlightened attitude towards education suffered a crisis that provoked a reappraisal of some of its theoretical assumptions. The modern sociology of education, as compared to the liberal, positivistic, optimistic educational thinking (Dewey and his followers), looks like another 'dismal science'⁶: its main preoccupation would consist in trying to explain why things do not seem to happen quite as expected by the reformers writing between 1950 and 1980.

Over the last decades many authors have considered the factors preventing specific social groups from achieving the normal rates of school enrollment and success (and hence from supposedly obtaining equal opportunities at the starting point of their social lives)⁷. Experience shows that the mere presence of a generalized offer of free education does not guarantee the automatic and effective integration within that offer of the underprivileged

sectors of society. Could there be a sort of inertia which hampers the social progress of those sectors through the substantial educational resources at their disposal? The diagnosis of the nature and causes provoking that social inertia led to a succession of theories and policies which have competed within the field of sociology of the education since the late fifties until this day (Coleman Report, 1967; Jenks 1973; Carabaña, 1983; Swann Report, 1985; just to mention a few at a macro-level and the New Sociology of Education and its followers at a micro-level). A detailed account of those theories is beyond the scope of this thesis. However a few remarks on some of them will be convenient in order to focus on the subject of this research. For this purpose the theories trying to explain the relative failure of universal education as an instrument of equal opportunities may be clustered into three families: 'cultural deprivation theories', 'reproduction theories', and 'cultural relativism theories'.

1.2. The 'cultural deprivation' approach

The first attempts to come to terms with the social shortcomings of mass education as established in industrialized countries led to theories that sought to examine the failure of the educational system in achieving its postulated objectives of cultural and economic integration as the result of certain "deficiencies" on the part of the underprivileged groups showing a low level of school achievement (Craft 1970). Programmes of compensatory education were established in order to deal with, correct or compensate for these 'deficiencies'⁸. According to this point of view the educational system could not accomplish its goals with respect to those sectors of the population because of a double deficiency: a lack of adequate teaching resources, both material and human, in the centres of education, and a lack of adequate cultural resources on the part of the social sectors in question. The theory of 'cultural deprivation' was a typical formulation of that point of view, as Bernstein (1970, 1971), Craft (1970) and Keddie (1973) have argued. The responsibility for the failure of the education system was placed, on the one hand, on that very system —ill-prepared to face its task, but which nature was not questioned—⁹ and, on the other hand, on the familiar background and the general social environment of the allegedly "culturally deprived" children (Keddie, 1973).

Once the problem had been interpreted within that frame of reference, the remedy for the deficiencies of the education system as an instrument to achieve equal opportunities for all was apparently easy to implement: it would simply consist of transferring the adequate resources that were lacking, first from public funds to the educational institutions, and then —converted into cultural resources— from those institutions to the deprived groups. That is, in a nutshell, the concept of 'compensatory education' which was the basic idea behind specific policies implemented during the sixties in the USA and in Britain, and designed to redress the social imbalance ingrained in the education systems. However the rather poor results of those policies showed the inadequacy (Coleman, 1969), not only of that concept of compensatory education, but also of some assumptions underlying it, such as the theory of cultural deprivation.

The notion of cultural deprivation defined the lack of success of the educational system with respect to certain social groups in terms which were predominantly quantitative in nature (Bernstein 1971), as if the problem were one of cultural malnutrition that might be overcome just by increasing the intake of cultural calories. This outlook was too simple, though, and not surprisingly, its capacity to cope with the problem showed to be very limited.

As Williams pointed out

"it is difficult to feel that... the problem is merely one of distributing it (education) more widely" (Williams, R. 1975: 72).

Cultural deprivation theorists assumed that only one culture, namely the hegemonic one, was a suitable cultural and social vehicle. Consequently, that point of view conceived the other cultures existing in society in a negative way; their differences with respect to the dominant culture were visualized either as cultural deficiencies (Plowden Report) or as pathological deviations. That point of view overlooked the functional role of those subordinate cultures among the social groups that assume them, a role allowing these groups, and the individuals belonging to them, some sort of social coherence (Keddie 1973).

In contradistinction to these views, it can be argued that a culture, from the point of view that will be developed in this thesis, is first of all an environment and a means of social (collective/individual) survival. Individuals are structurally coupled¹⁰ to their own distinct cultures (Maturana, H. 1980: 69), and cannot merely replace these cultures as if they were something external to them. Cultures are not disposable devices; in fact any cultural change can be described as an organic process¹¹, occurring in the minds of specific individuals, a process which involves autonomous subjects and can only take place on condition that the social coherence of those subjects is preserved.

It can be argued that a basic flaw in the theory of cultural deprivation was that this theory mirrored to a considerable extent an attitude still too common in sociological thinking: the attitude of directly imposing the observer's categories onto the observed reality, hence producing a definition of that reality which ignores its 'internal coherence' (von Foerster, 1981). In the light of a body of research, I will argue that social groups would have representations of themselves and of other social groups with which they keep some sort of contact (Cole & Scribner 1974); but usually the images that they generate about themselves would be substantially different from the images that they provoke in the other groups (Mead, M. 1942; Goldthorpe J.H. and Lockwood D. 1963; Giddens, 1984, 1987). The images that a group generates about itself would be self-images, and those produced by that group but referring to some other groups would be other-images (Berger and Luckman, 1967). This difference is essential, and should always be taken into account in social research. As Young suggests, we must be aware of

"... treating 'what we know' as problematic, in order that it becomes the object of inquiry, rather than as given" (Young, M.D.F., 1971).

Certainly, a specific group may assimilate an image of itself which has been produced by another (generally, a more powerful and prestigious group). But although in such cases the content of the respective self- and other-images representing the first group may be quite similar—and the similitude is liable to be more illusory than real—the difference between those two kinds of images still would persist, and should be carefully detected. Social research is

done, as a professional activity, by a specific people, sociologists¹². And, in general, social scientists are, almost by definition, middle class people embedded into the hegemonic culture. For that reason, sociologists as a specific group are constantly at risk of imposing their 'spontaneous' categories and images onto the realities that they study, specially that of other groups with a substantially different cultural background (Lévi-Strauss, 1952). Thus social scientists would frequently generate other-perceptions of those groups which may be quite different from their own self-perceptions of them (in that sense, there is no difference between social scientists and any other social group). And the point is that such self-perceptions would play an important part in explaining the social behaviour of the social groups in question (Cole & Scrivener, op.cit.: 197-201).

The theory of cultural deprivation was a typical instance of an other-defined image, generated by one social group (of social scientists and policy makers) about other social groups (just the ones defined by the application of the theory: i.e. the alleged culturally deprived sectors of society)¹³. The problem is that social theories not only describe social reality, but constitute and modify that reality. That is why the making and diffusion of social theories has a direct political effect (Young 1971). It can be argued that (self- or other-) define a social group amounts to creating that group as a social entity -this definition makes that group socially 'visible' and this fact would determine the action of that group and that of the others in regard to it.

I will argue that a social theory should not be considered independently of the effect that it is going to have on the 'social objectivity' which it tries to portray. Whereas every group has, in principle, the right to self-define itself as it pleases, Social scientists must be very careful regarding their own other-definitions. Because those other-definitions may be enforced upon the corresponding groups against the self-perceptions of the people included willy-nilly, by the definitional diktat of others, in those groups. And this circumstance could be a source of alienation and unnecessary suffering for those people (Beauchamp 1982).

The concept of cultural deprivation is an example of a strongly reductionist 'other-definition' —the more extreme form of 'other-definition'. In

short, one can consider any view according to which every existent thing exists in the terms of some privileged reality as reductionist (Vygotsky 1960; Mayr 1970). The idea of cultural deprivation was reductionist in the sense that it reduced the social relevance of the diverse cultures present in a society to their degree of conformity with the pattern of one of those cultures which happens to be dominant. This hegemonic culture was viewed in absolute terms, as *The Culture*, and its institutions and features were contemplated as neutral with respect to their social repercussions (Baratz and Baratz 1970). The initial policies of compensatory education shared, generally in an implicit manner, those theoretical assumptions, and when the results of these policies fell short of the expectations which had encouraged them, those assumptions began to be revised (Bernstein 1970; Baratz and Baratz 1970).

1.3. The relativistic and 'reproduction' approaches.

During the late 1960's and early 1970's the notion of cultural deprivation was criticized, on the one hand, along lines similar to those that have been expressed in the previous paragraphs¹⁴, and on the other hand, from neo-Marxist positions expressed in a structuralist idiom (Baudelot and Stablet, 1971; Williams 1973; Bowles and Gintis 1976), and the libertarian movements and the deschoolers (Illich, 1971; Reimer, 1972). The former criticisms originated theories such as those that stressed the importance of alternative communication 'codes', and the 'resistance' of subordinate cultural groups (Willis, Apple, Giroux) whereas the latter criticisms gave rise to the 'reproduction'(Bourdieu and Passeron) and 'correspondence' theories (Bowles and Gintis). In fact, the cultural reductionism underlying the notion of cultural deprivation was not only theoretically unsound, but pragmatically ineffectual. The compensatory policies inspired in a more or less explicit manner by a reductionist approach did not fulfil the expectations of their designers¹⁵.

Things turned out to be more complex than initially thought; the problem was not, as early compensatory philosophy had supposed, simply one of cultural resources to be properly allocated. There was also a problem of communication; cultural communication or better —as soon would be realized— trans-cultural communication. The relationships between dominant

and non-dominant cultures were not merely quantitative (the differences between them being conceived as due to different levels of 'cultural intake'), but qualitative. Some authors discovered that the problem was not one of cultural deficiency (on the part of the non dominant cultures), but one of relative incompatibility and social inequality (between cultures and their respective communicational and social strategies) (Baratz, Bersntein, Vulliamy ...). The relationships between cultures, which were previously thought of unilaterally, began to be conceived of in symmetrical terms; and the range of groups that occupied the attention of the researchers increased. A great deal of educational research shifted from the study of social class differences and interactions to the investigation of race and gender issues (McRobbie, 1978; Kelly, 1981; Arnot, 1981; CCCS 1982; Barton and Walker 1983 just to mention a few). Tyack and Strober (1981) resume this change of emphasis in a sentence:

"... gender is one of the fundamental principles in society, as important a category for analysis as class or race or age".

The understanding of the problem as one of trans-cultural (in)communication was behind a reassessment of the methods at work in the education process (and more specifically in the policies of 'compensatory' education implemented until then). Before that moment, the responsibility was laid heavily not only on the 'cultural deficit' of the unprivileged groups, but also on the teachers and the lack of resources of the educational environment —Joan Simon (1974) calls the phenomenology studies in classrooms "the blame the teacher school of sociology". But the 'commnicational approach' unveiled the different personality and autonomy (in the form of 'codes', 'contexts', 'cultural capital', etc.) of non-dominant cultures, and the reductionist cultural absolutism behind most of the theory and the practice of compensatory education had to be revised. Once cultures are considered in symmetrical terms (Midwinter, E.; Jackson, B.), reductionist cultural absolutism loses its nurturing ground. Consequently the formulation of the problem of communication between cultures led to the questioning of the social position and the social value of those cultures; and as a natural development, this questioning prompted the reconsideration of the entire system of assumptions, methods and goals that characterizes the education process as a whole.

Once that point of view was adopted, the final responsibility for the inability of education to live up to its proclaimed social aims would lie not simply on the familiar background, nor on the teachers' prejudices and working habits, but on the educational system as such: its general goals and its social function. As the social function of education depends upon the organization of society as a whole this was seen to bear ultimate responsibility. This is something that had been argued by neo-Marxist theorists from diverse but often related perspectives, i.e.: theories of reproduction, correspondence, resistance, etc. From that point of view education is conceived of as a fundamental instrument for reproducing the dynamic and the kind of society which makes this type of education possible. A society, it is argued, that intrinsically generates social differentiation and inequality, inevitably produces an education system subservient to this goal (Baudelot and Establet, 1971; Bourdieu and Passeron, 1976; Bowles and Gintis, 1976, etc.)

The recognition of diverse cultures coexisting within society from a pluralistic perspective —on an equal footing, in principle at least—, is a point of view that may be called 'cultural relativism' (Lawton, 1975: 28-29). When applied to the social analysis of education systems, this perspective reveals and stresses the cultural characteristics of the social groups which are prone to underachieve within those systems. The culture of such groups, this point of view argues, would generate their specific systems of meanings, which would have a coherence of their own, and may not be compatible with the dominant systems of meanings, embodied as official cultural institutions and practices (and specifically as education institutions). The 'cultural specific approach', that draws on the findings of the 'communicational approach', has provided deep insights into the nature of the problems posed by the educational underachievement of non-dominant social groups. In the first place, that approach has pointed to what it labels as the blindness of the dominant culture —which is enshrined in the education system— regarding the other cultures present in our societies. Secondly, it has shown that in these societies there is a strong correspondence between class, gender, race divisions on the one hand, and cultural divisions on the other hand. Finally, these approaches have made a cogent critique of the naive assumptions underlying the philosophy of compensatory education as formulated in the early 1960's. Whitty states that

"... it is only possible to say that the rising concern with those issues (gender and race) has helped to make the cruder forms of neo-Marxist theory inadequate to an understanding of contemporary social relations" (Whitty, G., 1985: 55).

1.4. The risk of cultural fatalism.

However, the cultural specific approach would face a basic problem: the cultural characteristics of underprivileged social groups may be a source of identity, but can it also be a source of marginalization. Therefore, to give some sort of status and to further those characteristics may contribute in some ways, through the consolidation of that identity, to the de facto perpetuation of that discrimination (Lawton, 1975: 28).

It can be argued that an approach derived from cultural relativism would bring into question not only the methods and contents, but also the established goals of education in a culturally diverse class society (Gramsci, A. 1971). Its adherents have been unable to propose a credible set of alternative goals. The crux of the matter is that cultural relativism is in a sense incompatible with the Enlightenment's emancipatory idea of education, as well as with its liberal and socialist outgrowths for a number of reasons. If according to that idea education has to play a fundamental role in overcoming the limitations which constrain people's possibilities of development in society, a radical cultural relativism would attach those people to the very reality which enshrines those limitations, namely their own cultural background (Baratz & Baratz 1970). That is why cultural relativism, if taken at face value, would represent a stage at which the evolution of Western culture, as it is generally understood, would ultimately be self-defeating. If all cultures were symmetrical by right, then no one could claim that its own cultural goals were in any way 'better'. Therefore, the educational system should not try to assimilate all the different cultures to any of them in particular, but further the autonomous development of everyone framed within whatever culture or cultures are available. Considering human beings as active sense-makers (Roche, M.; Bernstein R.J.; Maturana, H.) the bet for an autonomous and, at

the same time, collective production of knowledge is supported by authors of diverse traditions as Young¹⁶; P.S. Wilson and G. Pask.

But that would not only mean the abandonment of an essential aspect of the ideal of universal and compulsory education —the idea that such an education ought to be a common education. It can be argued that those different cultures would be, at the same time, a product and a fundamental reproducing factor of the class, gender and race divisions of society. Consequently, to promote their autonomous reproduction may well mean to contribute to the perpetuation of those social divisions. In fact, from a radically relativistic point of view, why should not working-class children stick to their cultural traditions, and why should not the educational system merely help them to reproduce those traditions —in other words, to smoothly reproduce their social condition? This way of reasoning would easily lead from cultural relativism to a sort of cultural fatalism which political implications would be de facto deeply conservative, as Gramsci has argued (1971).

Within the cultural relativism approach, the positions of some feminists and black sociologists¹⁷ criticizing the current discriminatory education for women, ethnic minorities and working-class people, submitted to an ethnocentric, patriarchal and class-biased curriculum and to a marginalizing educational structure, framed the debate on education in new more complex terms. On the one hand, they have sought to show the inadequacy of what they saw as mechanistic forms of neo-Marxism to deal with modern social complexity which led to the pessimism of early reproduction and correspondence theories (Demaine 1980). On the other hand, at the moment, there is no comprehensive proposal on offer to overcome the current unjust situation. From this fact, the risk would arise of reducing the old universal goal of education to a bid for cultural particularism (Stone, M. 1980).

The dilemma posed by the relativism underlying the 'cultural specific approach' may be worded in these terms: if the goals and contents of education are those of the dominant culture/class, groups which belong to other cultures/classes are likely to fail in reaching the standards of that imposed culture. If the goals and contents of education are those of every specific culture/class in society, everybody is perhaps more likely to succeed in

becoming integrated —but also trapped— within their cultural background, class or gender. Culture would be a double-edged reality: it would be a necessary instrument for people's self-realization, but it would also act as cutting off people from alternative ways of self-realization foreign to their specific culture¹⁸.

1.5. Culture and the individual.

It is possible to get the impression that there should be some way out of that dilemma and/or it is a false one. Because, as I will argue in this thesis, cultures would only exist through individuals, and individuals would constantly reinterpret those cultures. It would be an individual/culture dialectic within which change —and change in a direction enabling the fulfillment of new potentialities for self-realization— would be possible. I will argue that we need not throw away the emancipatory goal attached by the Enlightenment to universal education, but only to reshape it in new, less absolutist, more complex terms (Varela J. and Alvarez Uria, F. 1991, 1993).

Cultural absolutism tends to ignore the existence of other cultures, asserting only one; in that sense, it would be an unconscious kind of 'culturalism'. Cultural relativism tends to hypostatise every culture; it would be a conscious sort of 'culturalism'. Both assume the primacy of the culture over the individual. Both of them would be inclined to ascribe individuals to cultures, and not cultures to individuals. This cultural relativist outlook is a theoretic point of view which would hypostatize cultures as something above the individuals who 'belong' to them. Culturalism, like behaviourism and environmental determinism, would represent a viewpoint according to which things are determined from the outside. Now, such a viewpoint attempts, by nature, to reduce the explanation of the activity of a system to the action of external factors impinging on it. In a way, that is still the received "episteme", but over the last decades it has been increasingly challenged in many theoretic fields, from linguistics to biology¹⁹ (in fact, Darwinism was perhaps the first consistent departure from the 'external' episteme, represented in biology by Lamarck).

In the case of cultural relativism we face a sort of reductionism which is different from that of cultural absolutism, but almost as dangerous: not a reductionism of (non-dominant) cultures to (dominant) culture, but a reductionism of individuals to their cultural background. From that point of view, individuals would be a mere product of their culture, instead of being considered as productive cultural agents capable of modifying step by step and developing that culture in idiosyncratic and highly unpredictable ways. That reductionist concept, to which cultural relativism is prone, is frequently at the basis of what has been called here 'cultural fatalism'. The theories sharing the cultural relativist outlook are specially at risk of incurring in, or being used de facto in the promotion of, diverse degrees of that fatalism.

It would be misleading to reduce —even implicitly— the variety of cultural potentialities present in the individuals, to that of the hypothetical cultural background which those individuals are deemed to belong to. It would be unrealistic —particularly in periods of rapid social change— to see the relationships between the individuals and their alleged cultural background in terms of a mere reproduction of the latter by the former.

Certainly, to assume that students come from different cultural backgrounds, and that the education process must not reduce those diverse backgrounds to the values of the dominant culture would be a fair and sensible position. But people involved in education must also understand that the relationships of individuals with their own cultural background is not mechanically determined. From the perspective postulated in this thesis, it can be argued that this is a dialectical relation through which an individual may transcend —and in some sense does transcend— the constraints of that initial background. Instead of contemplating the relationships between individual and cultural background in terms of simple reproduction, such relationships should be understood in terms of production (to some extent, no doubt, reproductive production, but also novelty creating production)²⁰. I would argue that this is a way to explain the pervasive phenomenon of social change, which cannot be denied, and yet most sociological theories find so difficult to explain.

1.6. The cultural self-development approach.

It can be argued that cultural relativism usually leads to cultural fatalism when researchers look at cultural systems as reified entities (that is to say, as things). But cultural systems may be viewed in other way: as individualized realities. This will be my approach in this thesis. I will argue that individuals are cultural systems in themselves; but they are living cultural systems, not reified ones. Certainly, those systems would interact with each other, and that interaction would produce as a result the 'parallel evolution' of such systems. The culture of a group is just the outcome of the parallel evolution —generated by processes of 'structural coupling'— undergone by individuals under conditions of interaction. That inter-individual culture would exist only in those individuals and as a result of their interaction, it would not be a Platonic reality of which such individuals would only be particular instances. On the contrary, usually social agents need to fight in order to intervene to introduce changes. It can be said that only individuals' intervention on the already established culture, would make culture, and consequently only individuals would make and change cultures.

It can be argued that individuals are at the same time (systems) culturally autonomous and socially constrained (by their cultural background). There is no contradiction in that: living beings are also autonomous²¹ (they produce themselves "from the inside", through the internal logic of their genetic message), and yet they are constrained by their environment. Individuals, to borrow an expression from existentialist philosophy, are "thrown into existence"²², where they have to realize themselves as coherent systems of action in a constrained environment.

From this point of view, individuals can be conceived of, not as instances of a given culture, but as potentials for cultural innovation. The concept of cultural self-development of the individual fits into this theoretic frame and tries to encompass the idea of individuals as cultural potentials. From this point of view, a relevant social analysis should not try primarily to focus on the constraints acting upon the individuals, conceived of in a static way, but to trace the potentialities of coherent development of those individuals as cultural systems. Because any constraint would not exist in an

absolute sense, but only with reference to the systems of action (the individuals) which face them and may change them in specific ways.

As I will explain further on (see 114-119), individuals, as cultural/social systems, would be systems of cultural/social self-perception (in short, self-perception systems). These systems would be intrinsically coherent, because they would be the fundamental mechanism of a corresponding individual action system, and action is only possible if it responds to a certain coherence (if it 'makes sense'; for an action system to lose that inner coherence means to lose its very capability for acting). This perspective has significant consequences when applied to the study of socio-educational problems.

1.7. The concept of socio-educational motivation.

The concept of cultural (individual) self-development echoes the original insight into the essence of education. "Educare" literally means "to lead out", that is to say, to lead the process of development of an individual from the inside to the outside (Lerena 1985). In a broad sense and referring both to family and formal education, the main aim of education is to further the potential inside an individual in the process of becoming an adult person²³. Now that process, as I said before, is at the same time autonomous and constrained. It is not an easy process, because there is not a spontaneous fit between one aspect and the other.

It can be argued that individuals would always try to change their relationship to their cultural background, they would always try to find new ways of dealing with the social milieu. They would do so, because this milieu is changing, and cultures are essentially conservative in nature, and only individuals can explore new ways of cultural realization. That is why individuals, in the process of becoming persons, would run into conflict with the social constraints of their cultural background. The result of that conflict would be (individual, and then, social) cultural innovation. Consequently, to steer that conflict would be necessary for the education process to achieve its goal, enabling the individual to resolve such conflict through viable innovations.

But in order to further this conflictive process of cultural innovation it would be necessary to understand the realities which underlie it; and these are the realities of the individuals as self-perception systems dynamically self-constructing themselves. **The analysis of those self-perception systems in the case of Spanish students belonging to the last year of their compulsory education is the specific subject of this thesis.** The wider aim of this analysis, however, is to point to the educational means through which that cultural/social potential of self-realization and innovation of students in general may be developed.

I refer to those means with the concept of socio-educational motivation. This thesis is not going to elaborate on how socio-educational motivation may be implemented. But it is going to put forward a theoretic framework (the concept of self-perception systems), a method of analysis (sociosemantics) and a background knowledge (the patterns of self-perception resulting from my research), which may help in that implementation.

NOTES TO CHAPTER 1

¹ In this thesis, when referring to both sexes I will use 'she' and 'her' instead of the most commonly used 'he' and 'his'.

² "Universal education is the power which is destined to overthrow every species of hierarchy. It is destined to remove all artificial inequality and leave the natural inequalities to find their true level. With the artificial inequalities of caste, rank, title, blood, birth, race, colour, sex, etc., will fall nearly all the oppression, abuse, prejudice, enmity, and injustice, that humanity is now subject to." Lester Frank Wards, *Education* c. 1872, quoted by Bowles and Gintis, 1976: 26–27.

³ In Bowles and Gintis words: "The failure of educational reforms stems from the contradictory nature of expanded reproduction, equality of opportunity and self-development in a society whose economic life is governed by institutions of corporate capitalism" quoted in G. Whitty, 1985: 25.

⁴ The development of the concept of 'emancipation' by Adorno and Habermas is treated by Ferrater Mora, J., 1979: 912.

⁵ In Meyer and Ramirez's view, a group of advanced countries (what they call 'the old core') "were already approaching universal mass education by 1870. Thereafter, mass educational systems appeared at a rather steady rate around the world until World War II, with a sharp increase in the rate at that point" (1992: 145–146).

⁶ The "dismal science" was a name coined for Economics by Thomas Carlyle.

⁷ From Kenneth Lindsay in the twenties to most recently Hope (1972); Ridge (1974); Goldthorpe (1974, 1976, 1977a, 1977b, 1980/87); Halsey (1975, 1977, 1978, 1980); Carabaña (1983); F. Enguita (1990), etc.

⁸ "Compensatory education emerged in the form of massive pre-school programs like Project Headstart (see Ruth Adam, *New Society*, 30 October 1969), large-scale research programs such as those of Deusch in the early 1960s and a plethora of small scale 'intervention' or 'enrichment' programs for pre-school children or children in the first years of compulsory education." B. Bernstein, 1970: 344. See also B. Bernstein, 1971: Chapter 10.

⁹ This perceived failure of education is reflected by Whitty's comment: "clearly the organizational structure of schooling did itself come under scrutiny, and indeed underwent successive changes, but these were generally designed to increase the penetration of an education, the nature of which continued to be taken for granted". Whitty, G. 1985: 10.

¹⁰ See definition of the concept 'structural coupling' in Chapter 2.

¹¹ By 'organic process' I mean 'organizationally closed process', a concept which will be explained in the next chapter.

¹² See P. Bourdieu, J.C. Chamboredon and J.C. Passeron (1973) *Le metier de Sociologue*, especially the 'Conclusions' and the 'Illustrative texts' mainly those of Lèvi-Strauss and Mauss.

¹³ Nell Keddie in the introduction of *Tinker, Tailor...*, refers to Wax and Wax study about Indian reservation schools. One of the educational administrators says about the Indian child "his home has no books, no magazines, radio, television, newspapers: it's empty!....we have to teach him everything... when he encounters words like 'elevator' or 'escalator' in his reading he has no idea what they mean". Keddie, 1973:12. In my personal experience as a primary school teacher in Spain, I could refer to similar comments made by urban teachers about rural students.

¹⁴ Baratz S.S and Baratz J.C in their analysis of researches about culturally related behavioural differences find this type of cultural hegemony: "research on the Negro has been guided by an ethnocentric liberal ideology which denies cultural differences and thus acts against the best interest of the people it wishes to understand and eventually help" *Harvard Educational Review*, 1970, 40 (1): 29. See also Whitty, 1985: 7-21.

¹⁵ "It was only with the failure of those policies ... when a broader movement for curriculum change had already developed, that the nature of what working-class pupils were failing at began to be given serious attention by sociologists of education" G. Whitty, 1985:11.

¹⁶ M.F.D. Young (1975) "The basic premise of a view of 'curriculum as practice' is not a structure of knowledge, but *how men collectively attempt to order their world and in the process produce knowledge*" (my italics).

¹⁷ Stone, 1980; Mullard 1981; Ccs 1982; Mcrobie 1984; Harding 1986; Arnot 1987; Cockburn 1987; Acker 1989, etc.

¹⁸ "There is also the point that *if* an environment is an extremely limiting one, then to base the whole curriculum on 'relevance' to it may be to 'sell the children short' in a dangerous way". Lawton, 1975:28.

¹⁹ See in linguistics the work of Chomsky and Searle; in psycho-linguistics Aitchinson and Curtiss; Labov and Trudgill in sociolinguistics.

²⁰ In the line of culture production see Willis, P. 1990.

²¹ Although there are other positions in biology, here we follow the ideas coming from H. Maturana and F. Varela who have developed a new line of thought in biology based on the principles of the autonomy of living beings: "A system is autonomous if the relations that characterize it as a unity involve only the system itself, and not other systems...since autonomy is not necessarily a feature exclusive to living systems, any attempt to explain the organization of living systems must show how they are autonomous and how all the phenomena proper to them arise as a result of their autonomy. It is in this context that I maintain that the notion of autopoiesis fully characterizes living systems as autonomous entities in physical space." Maturana, H., 1981:21.

²²"Dasein id Being —possible which has been delivered over itself— *thrown possibility* through and through." Heidegger, M.1962: 183.

²³ In this time of mass schooling, more or less centrally designed by the corresponding authorities, the definition of the appropriate type or types of adult person depends on a complex network of factors and competitive forces. The analysis of those factors and forces although of extreme interest is outside the limits of this thesis.

Chapter 2.

Theoretical Background of the Research

2.0. Introduction.

The purpose of this chapter is to present a series of concepts that, are vital to lay the basis for reaching an adequate understanding of the notion of 'self-perception system', which is at the basis of my research and will be explained in detail in the following chapter.

In this chapter I shall start by considering, 1) the concept of system; 2) the use of that concept in social sciences; 3) the advantages and disadvantages of that use; 4) new departures from that use which may enhance the role of the notion of system in social sciences; 5) some differences between natural and artificial systems; 6) finally, I shall put forward a revised, provisional definition of system.

These concepts are presented, as **heuristic notions**, they are just one theoretic interpretation of some kinds of realities, not the **only** possible interpretation of these. Consequently, those concepts should be understood as hypothetical, heuristic tools. In a process of research heuristic hypotheses play a role which is very different from that of empirical ones. The latter must be referred and corroborated by a concrete specific set of empirical data. On the contrary, the former do not directly refer to concrete empirical evidence; they do not constitute an attempt to establish how things are, but how things may be **viewed** (in order to generate at a subsequent stage of the research, specific empirical hypothesis).

The concepts which I am going to put forward in this chapter should be understood from this epistemological point of view: as elements of a hypothetical framework, postulated with a heuristic purpose. This heuristic character of those concepts, becomes clearer when one considers the theoretic framework to which most of them belong: the field of systems theory and cybernetics.

Systemic concepts, in general, have an essentially heuristic character. They make up abstract models which should not be confused with empirical reality and yet they may allow the researcher to view (to ask) specific realities from the outlook provided by those models.

A full explanation of this last definition, however, will require the introduction and adaption of several basic concepts which, as indicated, have been developed in the field of systems thinking and cybernetics: concepts such as 'classical' and 'nonclassical system', 'organizationally closed system', 'action system', 'informationally open system', 'reflectivity', 'communication' and 'complexity'.

Those definitions, however abstract they may seem, will be instrumental in making clear the presuppositions of the heuristic model which I am going to develop in these pages.

2.1. The concept of system.

In this research I shall use Buckley's definition of 'system', as a starting point:

"We define a system in general as a complex of elements or components directly or indirectly related in a causal network, such that at least some of the components are related to some others in a more or less stable way at **any one time**" (Buckley 1974: 493).

2.1.1. The concept of system in social sciences.

The concept of system has been in use in sociological thinking for quite a long time¹. In 1967, Buckley already referred to the generalized use of the notion of 'social system', he argues:

"The modern systems view, which flowered during World War Two (though building on principles in the wind much earlier) has already borne its first fruits, and is in danger of a superficial acceptance into the corpus of sociology, by way of incorporation of a part of its now common vocabulary" (Buckley, 1967: vii).

The danger, in Buckley's view, of that assimilation of systemic concepts by sociological thought, would stem from the fact that,

"... the now standard use of the notion of "social system" —derived principally from equilibrium and organismic models— is deluding us into believing that we have been using modern systems theory for some time" (ibid: vii).

If that belief is misleading, it is, in Buckley's opinion, due to the fact that

"... current dominant (sociological) theory is built on mechanical and organic (more exactly, organismic), system models laid down during previous centuries which are quite inappropriate in dealing with the type of system represented by the sociocultural realm" (ibid: 1).

The use of a systemic vocabulary in the influential works of theorists such as Pareto, Parsons and Homans, would be exposed to this sort of criticism, according to Buckley's interpretation. As a result,

"The greater part of current discussion of systems in sociology is embarrassingly naive and out of date in the light of modern systems

research in other disciplines... the underlying conceptions show little advance over the mechanical equilibrium model of earlier centuries ... These advances should have alerted as to the possibility that the sociocultural level of systems is structurally and dynamically unique and not fundamentally comparable to these other types of systems, despite some point of similarity" *ibid*: 7).

Since the 1960's, however, as I shall explain in the following sections of this chapter, the development of the systems approach in sociological thought has tried to overcome those shortcomings, in the search for a new, more adequate systemic paradigm (Geyer and Zouwen 1978).

2.1.2. Advantages and disadvantages of the use of systemic concepts in social sciences.

The notion of society as a system has played a fundamental role in the process of portraying social entities as functioning wholes:

"A social system (the total social structure of a society...) has some sort of unity which we may call functional unity. We can define it as a situation in which all the parts of the social system work together with a sufficient degree of harmony or internal coherence" Radcliffe-Brown, quoted by Merton 1968: 99.

This point of view has established new standards of scientific acceptability in social theories. The systemic approach in sociology, as understood by some of the representatives of the structural-functionalist outlook², has made possible the visualization of aspects of society as structured totalities.

However, the tendency to rely on mechanistic and organic analogies³ might have acted as an obstacle to the proper comprehension of the more specific traits of social entities. As Buckley argues:

"In dealing with a sociocultural system ... we jump to a new system level and need a new term to express not only the **structure-maintaining** feature, but also the **structure-elaborating** and **changing** feature of the inherently unstable system, i.e., a concept of morphogenesis". Buckley 1967: 14-15.

It is this concept of **morphogenesis** that is difficult to conceptualize in the systemic outlook of traditional functionalist analysis, such as Radcliffe-Brown's⁴.

Through the second half of the century, however, the systemic approach has been elaborating a conceptual framework which might provide the tools necessary to overcome that limitation. In the opinion of some authors it would not be unwise for the social scientist to consider that framework seriously as a source of theoretical inspiration (Lewin, 1947; Mackay, 1974; Buckley ⁵). It can be argued that, by doing so, social scientists would be able to compare and contrast their theoretic problems with well developed and clear-cut concepts. These concepts while originated in other fields and perhaps not totally suitable to the analysis of social entities, might further the search for new, more adequate and rigorously defined ideas, which may be at the basis of a renewed social theory. My work is part of that quest.

2.1.3. New departures in systemic social thinking.

The notion of morphogenesis, as suggested, seems crucial in order to overcome the shortcomings of mechanistic and organic systemic models as applied to the field of social theory.

"The mechanical equilibrium model and the organismic homeostasis models of society that have underlaid most modern sociological theory have outlived their usefulness. A more viable model, one much more faithful to the **kind** of system that society is more and more recognized to be, is in process of developing out of, or is in keeping with, the modern systems perspective (which we use loosely here to refer to general systems research, cybernetics, information and communication theory, and related

fields). Society or the sociocultural system, is not, then, principally an equilibrium system or a homeostatic system, but what we shall simply refer to as a complex adaptive system". Buckley, 1974: 490.

Systemic and cybernetic concepts have been developed over the last four or five decades, in several different disciplines have adopted diverse theoretical points of view: communication and information theory, general systems theory, cybernetics and control theory, computer sciences, artificial intelligence, cognitive sciences, neuroscience, theoretical biology, etc. New fields, such as artificial life⁶, are still emerging within this many-sided tradition.

The first generation of systemic concepts (von Bertalanffy, Wiener, Ashby) considered the systems which they intended to portray mainly in an 'objectivistic' manner⁷: systems were understood as entities 'out there', and the subject who defines/controls those systems would be conceived of as being outside them. Arguably, this objectivistic point of view can entail a drastic epistemological limitation which makes those concepts basically inadequate to reach a proper understanding of social entities. Referring to the theoretical frame which is characteristic of that first generation of systemic thinking, Pattee says:

"As they now stand, general systems theories are not simply too restrictive in their formal methodologies, but exclude the epistemological basis both of physics **and** life. The unique and characteristic behaviour of living systems—which includes **measurement, decision-making, proscription, and construction**— cannot be adequately understood without realizing the epistemological duality of this behaviour and the necessity of complementary models of description to represent it". Pattee, 1977: 514.

The shortcomings that Pattee attributes to classical systems theory in its attempt to understand physical and biological systems seem to be even more incapacitating when the classical systemic frame is applied to social sciences. In fact, some the attempts to apply that theoretic framework mechanically to the analysis of social entities, seem to have shown that the basic concepts of classical (first generation) systems theory and cybernetics are essentially

inadequate to describe the most genuine features of social life, as was argued above.

But there is a second generation of systemic/ cybernetic concepts, which seems particularly apt to reach a better understanding of social entities (of social systems). This second wave of cybernetic thinking, so-called 'second order cybernetics' or 'nonclassical systems theory'⁸, intends to deal with systems which are not merely objective; they would incorporate the subject. From this point of view, the controlling subject would not be seen as an entity outside the system under consideration but as a fundamental part of it.

Some of the theories that are characteristic of this second wave of cybernetic thinking (von Foerster 1981d: 102-105) are now in the process of being assimilated by social theory⁹. Concepts such as those of 'autopoiesis', 'autonomous system', 'organizational closure', 'informational openness', 'structural coupling', 'information transfer', 'synchronous system', 'transition to chaos/order', etc., which belong to the new generation of cybernetic theories, have originally appeared outside the context of social research, mainly in natural sciences, such as biology and physics. It can be argued that those notions, if properly applied, might offer the prospect of a better understanding of many basic sociological phenomena, such as the emergence of social norms, the dynamics of social order/disorder, change and conflict (Buckley, 1974; Pask, 1975; von Foerster, 1981; Luhmann, 1987; Atlan, 1972, 1979, Morin, 1981, etc.).

2.1.4. Natural and artificial systems

There is a fundamental difference between artificial (man-made) and natural systems. Although the former—for example a clock—have some sort of organization embodied in a given structure, they do not organize themselves (they are not **self-organizing systems**). Many natural systems, on the contrary, have self-organizing capabilities: they generate their own characteristic organization.

"... systems on the philogenetic, higher psychological, and sociocultural levels, are characterized primarily by their morphogenetic properties. That is, these latter are distinguished precisely by the fact that, rather than minimize organization, or preserving a given fixed structure, they create, elaborate or change structure as a prerequisite to remain viable, as ongoing systems" (Buckley, 1967: 4-5).

Following Lazlo's (1972a, 1972b) typification of social systems (human societies) as a joint function, as 'social natural systems', it can be said that societies, like human individuals, basically are natural systems. Of course, societies, like individuals, produce artificial systems —such as laws, political and economic institutions, etc—; but at a fundamental level they are natural realities¹⁰. This is why they, like other natural systems, show self-organizing¹¹, morphogenetic properties¹². According to this analysis, the consideration of societies as complex adaptive systems, characterized by self-organizing, morphogenetic, capabilities (Buckley, 1974), can offer new insights to the social sciences (as examples, Pask's conversations theory; Luhmann's complexity analysis; Nowakowska's social change theory, Boumgartner's actor-oriented system analysis, Shubik's game theory, etc.).

2.1.5. A revised, provisional definition of system, adequate to the study of social entities.

In the light of the previous consideration of the notion of system, it appears that a too wide concept of that notion (such as the Buckley definition used at the beginning of Section 2.1) which does not specify, at least, some of the basic features of social entities, is not likely to provide an adequate basis for any social analysis undertaken on systemic grounds. A definition of system suitable for the analysis of social entities would require a greater specification of the specific characteristics of such realities, in order to avoid their assimilation into simpler types of entities (for example, artificial mechanical systems).

That is why, as a first step, I shall define the specific concept of system which I shall use when talking about 'self-perception systems'. In line

with the ideas elaborated over the last two decades by the new cybernetics¹³ (also called 'second order cybernetics'), I shall propose a provisional definition of the sort of systems which I am interested in: a system would be a **functioning whole, which has some sort of internal coherence between its components allowing it to produce and reproduce itself in potentially new ways, without loss of that internal coherence.**

2.2. Classical and non classical systems.

The idea of 'system' has been used as a tool of theoretical analysis with very different meanings, and in many fields. Initially, a system was understood as a complete coherent construct, often of a philosophical kind (for instance, the Hegelian system). Afterwards the notion of system, in the sense of a total, plural but interconnected, reality, was used to explain the constitution of the scientific object to be considered (Durkheim, 1912, Chap.3). Each particular science, from linguistics (Saussure, 1916) to economy (Walras, 1954¹⁴), tried to see its characteristic objects as totalities composed by related, interacting elements¹⁵.

The relevance of the concept of 'system' to social theory has been stressed especially by Talcott Parsons, in his influential work *The Social System* (1952). On the first page of this book he says:

"The interaction of individual actors, takes place, under such conditions that it is possible to treat such a process of interaction as a system in the scientific sense and subject it to the same order of theoretical analysis which has been successfully applied to other types of systems in other sciences".

Parsons' view, which has inspired one of the most important traditions of sociological thinking —which has been called structural functionalism—, apparently relies on some strong epistemological assumptions. First, the assumption that social entities ("the interaction of individual actors") are susceptible to scientific treatment, and that this treatment should be implemented through the consideration of those realities as systems. Second,

the assumption that "social entities may be subject to the same order of theoretical analysis which has been successfully applied to other types of systems in other sciences" (see Parsons' quotation above). Whereas the first assumption may reasonably be accepted, at least as a working hypothesis which would appear necessary to sustain any attempt to reach a scientific understanding of social entities, the second assumption appears today as highly questionable¹⁶.

Which 'other successful sciences', in Parsons view, would provide a suitable epistemic model for social theory, and would inspire an adequate type of theoretical analysis for social theory? Arguably, classical physics would not appear as an adequate model in this respect —although it is a very 'successful science' (Kuhn 1962; Popper 1968). The frequent attempts to portray social processes through a theoretical structure similar to that of classical, Newtonian physics, have shown obvious limitations, as was already argued quite a long time ago by Sorokin in his presentation of the 'mechanistic school' (Sorokin 1928: chap.1), later on by Buckley (1964) and more recently by Heylighen (1987, 1991).

To elaborate the reasons why this theoretical structure is not powerful enough to give a good account of the complexity and flexibility of social dynamics, would require a long, detailed analysis which lies outside the scope of this work. Nevertheless those reasons could be summarized in a single proposition: Newtonian physics —and all analogous theories—describes **distinctionally¹⁷ closed¹⁸ systems**; that is to say, systems whose elements, and interactions between those elements, are strictly defined beforehand. Neither new kinds of elements, nor new kinds of interactions between them, can appear within any such system. On the contrary, social entities appear to have as one of their most genuine features the ability to reproduce themselves in new forms (social change). Social systems and social processes are realities in which novelty is created, newness emerges (Buckley 1967¹⁹; Simon 1962; Forsythe, 1988).

It can be argued that any epistemic framework assuming the principle of 'distinctional closure'²⁰ would be basically inappropriate to represent this fundamental characteristic of social reality. Of course, one can impose a

distinctionally closed theoretical model on any given social process; but at the cost of 'freezing' that process, by denying its potentialities for change over time. From this point of view, social entities would appear as 'eternal' —in a way similar to mathematical truths²¹. These realities would change, but only in a prefixed manner. According to this outlook, some times assumed by the structural functionalist school, social processes would occur outside history²². From this standpoint, society would be explained at the cost of ignoring history²³, that is why within this theoretic framework the explanation of social change seems to be a particularly intractable problem.

As Lévi-Strauss, among others, has argued, social theory, could borrow theoretical inspiration from other sciences, mainly, in his view, linguistics. However classical, structural linguistics, also views language from a distinctionally closed point of view, and it does so in a completely static way:

"What appears as surprising in the first place when the facts of language are investigated, is that for the speaker the language succession in time is nonexistent: the speaker faces an state thus the linguist who wants to understand that state has to disregard every thing that has produced it and ignore dyachrony". (Saussure 1916:149)

Whereas Newtonian physics represents reality from a distinctionally closed, but dynamic point of view (Heylighen, 1989) structural linguistics portrays the reality of language from a strictly synchronic static standpoint. Linguists such as Saussure²⁴ or Jakobson²⁵ view language as an objective system of given components which define each other through a network of relationships of mutual dependence, and which compose a coherent totality. That sort of theoretical outlook appears to be adequate to represent only the aspects of social reality that can be contemplated —within a given and generally short temporal frame of reference— as strictly static. As Heylighen argues:

"All phenomena where something qualitatively new emerges, e.g. thermodynamical self-organization, biological evolution, most cognitive processes, socio-cultural evolutions..., can be characterized by differentia-

tion, i.e. the creation of new distinctions. Such phenomena simply cannot be represented within a classical theory". (1991:46).

It can be argued that classical epistemic models are not only distinctionally closed, but also 'objectivistic'. In general those models assume that in a system both the components and the set of relations and interactions between them are 'objective' in the sense of existing 'out there', independently from the observer (Navarro 1991: 89).

From that point of view, a system would have an objective reality, which is **given** to the observer. This observer would relate to such a reality 'from the outside', **and** the relationships between the components of the system would be **objective** as well. Those two conditions of objectivity —between the system and the observer and between the elements of the system— would depend on each other. Observers can claim that they deal with the system from an external, objective position only if the relations between the elements of the systems are somehow objective. For example, Durkheim concept of 'social fact' apparently binds together those two postulates of objectivity: the sociologists would be able to investigate objectively social entities, they would be capable of viewing those realities as existing 'out there', externally to them, because those realities would also be 'objective', **external** to the very social subjects who inhabit them. It can be argued that notions such as that of 'social norm' would supply the relations between the elements of the system with the sort of intrinsic, ontological objectivity which seems to be required for preserving the epistemological objectivity of the relationship between that system and the observer (von Foerster, 1981:274-85).

This interplay between ontological and epistemological objectivity appears to be present in many contexts of sociological research. For instance, the selection of a given set of social indicators would impose an 'objective' framework both on the relationships between the individuals who are the subject of the analysis and on the relationship between the researcher and those subjects. Bernstein referring to the framing of knowledge argues:

"... there is not an 'objective' frame: ... the form this code (educational knowledge code) takes depends upon social principles which regulate the

classification and framing of knowledge made public in educational institutions. Both Durkheim and Marx have shown us that the structure of society's classification and frames reveals both the distribution of power and the principles of social control". 1971:4748.

Arguably, this outlook can entail a peculiar form of problem: once the selection of that objective framework has frozen the social reality on which such a framework has been imposed, researchers could claim that they are merely depicting that reality, as external observers, and that they merely are dealing with homogeneous values that can be unequivocally distributed among the population.

This would be a classical way of conceiving social systems. It may be useful, especially when applied to restricted contexts of research, for example, a survey to know the voting intention prior to elections (Ibañez 1986: 57). However even in those appropriate fields of application, the power of resolution of that classical view would be limited, because it can be maintained that the 'objectivistic' point of view in sociology, as the objectivity of Newtonian physics, breaks down at some level of analysis. In physics this level is that of quantum phenomena (Feynman, 1985); in sociology it appears to be the level of the individual actor. In so far as social macrophenomena are determined, in the last analysis, by microphenomena occurring at the individual actor level, the 'objectivistic', classical, point of view could only give a coarse, superficial and often, at some critical points, clearly inadequate account of the real dynamics of social processes (Ibañez 1991).

In contrast to this point of view which can be termed as classical, Anthony Wilden considers that,

"... a system behaviour, be it informational or energetic, organic or inorganic, depends on the way in which the participant observer has punctuated it" (Wilden 1972a). Going further Steir says: "The 'same self' may be different as a result of its own selfpointing" (Steir, 1991: 2).

In reality, the observer somehow constitutes in Kant's sense the object. This constitutive role of the subject would be even clearer when the object that

this subject considers is a social reality, which necessarily involves other subjects. As Buckley argues,

"...the social system embraces the interrelations of component individuals who, themselves complex systems, do not simply react to one another in a mechanical, billiardball fashion, but rather actively contribute to the genesis of social structure and process by way of interpretation of the situation and the making of subsequent decisions or choices of action".
Buckley 1974: 386.

Following Buckley's postulate about the fundamental role that social subjects' interpretations and decisions play in the dynamics of social entities, I start from the bases of the epistemological hypothesis according to which social entities are not merely 'given' either to the supposedly neutral observer nor indeed to any other subjective element in those systems (to any individual agent acting within them). I shall argue that, on the contrary, those realities are constructed by both those individual actors and the observer. This point of view, which is perhaps held by a minority of social researchers²⁶, has found a modern formulation through some concepts developed by the second generation of cybernetic thinking, to which I referred previously²⁷. R. Felix Geyer and Johannes van der Zouwen, in their introduction to the two volumes of the book *Sociocybernetics*, present the main features of this new, nonobjectivistic outlook, when applied to the analysis of social entities:

"... (Sociocybernetics) stresses and gives an epistemological foundation for science as an **observer-dependent** activity. The feed back and feed forward loops characterizing the 'circular' form of systems thinking are not only constructed between the objects observed but between them and the observer. The subjective character of knowledge is emphasized by this approach: information is neither seen as inherently 'out there' in the observer's environment, nor is it entirely viewed as a figment of his own imagination or a result of his own cognitive processes. Information is constructed and continually reconstructed by the individual in open interaction with his environment" (1978: 1).

Thus, social systems, when viewed from this perspective as subject-dependent, non classical systems would be, in a way, non-objective systems.

But they would not be 'subjective' in the sense of being illusory. They would be nonobjective systems because they would not be given once and for all, but would be constructed, defined and redefined by their constitutive (subjective) elements and their relationships. In other words, they would be distinctionally open systems, by necessity, because they would be constituted by autonomous subjects. Arguably, where the phenomenon of subjectivity is present, a distinctionally open system would also appear. This relationship between subjectivity and distinctional openness appears in the biological domain.

Living beings as biological subjects are distinctionally open entities; they produce and reproduce themselves in new forms through the process of evolution. This distinctional openness would implement the subject's **autonomy**: the capability for an entity to constitute a world of its own (Varela, 1979).

In the case of social systems, as I shall explain in Section 2.7 and later in Chapter 3, the characteristic nonobjectivity of these systems, would stem from the phenomenon of **reflectivity**. It will be argued that social systems are **reflective systems**: each of their elements would generate an 'objectivity' of its own, and the whole system would be constituted by the reflection between those 'subjective objectivities'. Social systems, when their most peculiar characteristics are considered, would be nonclassical in that precise sense. They would be non objective systems, constituted by processes of reflection between the 'objective' images of several subjects²⁸. In order to explain adequately that idea of reflectivity, I shall first present some concepts which will be instrumental in the proper formulation of this idea.

2.3. Organizationally closed systems.

At the beginning of this chapter I wrote of selforganizing systems. In general a system capable of creating new distinctions (Spencer-Brown)²⁹ by itself and within itself, would be a **self-organizing**³⁰ system (Morin 1981: 133). There is one kind of self-organizing systems which have specially powerful capabilities to produce new distinctions: those systems that possess the property of **organizational closure**³¹:

"A particular (circular) organization of processes that recursively depend on each other for their maintenance and realization; they form a recursive closure", Zeleny, 1981: 5.

There are some systems (for example, living beings) which have the capability of producing and reproducing themselves as individual entities. It can be argued that they can do so because the elements and relations defining them at any given time, would generate other elements and relations which in turn, would produce those in the first place. Those hypothetical systems, whose elements and relations would produce each other in a recurrent way are called **organizationally closed systems**. Living beings may be viewed as a particular kind of organizationally closed systems; they would be **autopoietic** (self-producing) systems in the sense given to that word by Maturana and Varela (**Autopoiesis** is a concept coined by these authors; it means literally "self-production")³²⁻³³.

In relation to the use of the concept of autopoiesis in social sciences Geyer and van der Zouwen say:

"It should not be forgotten that the concept of autopoiesis was developed while studying living systems. When one tries to generalize the usages of this concept to make it also truly applicable to social systems, the biology based theory of autopoiesis should therefore be expanded into a more general theory of self-referential autopoietic systems. It should be realized that social and psychic systems are based upon another type of autopoietic organization than living systems: namely on communication and consciousness, respectively, as modes of meaningbased reproduction" (1990:7).

Beyond the limits of biology, autopoietic systems can also be conceived of as entities realized, not just in physical space and through a network of biochemical components, but in any sort of space and through a network of components of any kind. From this point of view, the topological boundary individualizing the autopoietic system is not necessarily of a physical nature. Zeleny assumes this outlook when he defines autopoiesis as,

"... a unity realized through a closed organization processes of production such that (a) the same organization of processes is generated through the interaction of their own products (components), and (b) a topological boundary emerges as a result of the same constitutive processes" (Zeleny, 1981: 6).

When this point of view is assumed, the notion of autopoiesis becomes assimilated with that of organizational closure. Organizationally closed systems would not only produce and reproduce themselves; they would also be able to self-organize themselves³⁴. That is to say, they would be capable of producing new distinctions as new features of their own organization³⁵. Therefore, they would not be strictly self-replicating systems; they would be able to change to some extent their organization without losing their individual identity. Hence, the organizational closure of a system would not be defined by the absolute invariability of that organization, but by the maintenance of the self-reproducing capabilities of the system as a unity. This maintenance may and even should allow changes in the structure of the system's organization.

From this perspective, it may be argued that organisms are not the only kind of organizationally closed, autopoietic systems in Zeleny's sense of the term autopoietic. There would be other kinds of organizationally closed systems which would be of special interest for social researchers. For instance, mental processes may be viewed as a particular type of organizationally closed systems (G. Pask 1975) and in a similar way, social actors may also be considered as organizationally closed systems which would produce and can thereby also reproduce their own closed organization as agents in the course of their social interactions. Arguably, the factor that underlies the regularities of those interactions (and consequently the 'social order') that they generate, would be the organizational closure of the individual agents who interact³⁶, rather than any 'objective' social norm.

In the light of this concept which I put forward in order to explore its heuristic potential as a working hypothesis, organizationally closed systems would be essentially **autonomous**, which means that they have and follow their

own laws³⁷. Those systems would maintain their own organization, which would be generated by them and would identify them. Hence, they would maintain their own identity by their own means. An organizationally closed system, as defined, would not be a 'closed system' in the sense that physics gives to that expression. The closed systems that are the typical object of the study of classical physics (e.g. a pendulum, the temperature of a room, etc.), would be closed with respect to matter and energy, not with respect to organization. In general they have no internal capability of producing and reproducing their own dynamics. Therefore those systems have no internal organization in the sense that is being assumed, because they do not produce and reproduce their own constitutive elements recurrently. Any sort of organization that they may have would tend to disappear because, being closed systems with respect to matter and energy, their entropy should increase in time. This is why they must be viewed as **organizationally open systems** (Prigogine, 1984).

Consequently, although it may sound paradoxical, physically closed systems would be organizationally open, and organizationally closed systems would be physically open. A physically closed system cannot have self-organizing capabilities because of the second law of thermodynamics (see von Foerster quotation above). Only physically open systems would have a self-organizing potential because they can decrease their own entropy by increasing the entropy of their environment. An organizationally closed system would be a particular kind of self-organizing system because at least, it must maintain its organization, preventing any increase in its total internal entropy. In order to accomplish that, an organizationally closed system must exchange matter and energy with its environment, that is to say, it must be a physically open system.

Thus typical organizationally closed systems such as living beings can be seen as open systems regarding matter and energy flows (H. Maturana 1980:54). Because of that, they cannot only maintain but decrease their internal entropy. In other words, they can increase their level of organization³⁸. They would be open systems with respect to the matter and energy flows which preserve their identity and potentially increase their level of complexity by maintaining a condition of organizational closure: they would organize

themselves in such a way that the dynamics of that organization would produce and reproduce itself, possibly in new, more complex forms.

As is argued in the field of autopoiesis (Varela, Maturana) that according to Darwin and the standard theory of evolution, living beings evolve through a process of **structural coupling**³⁹ (coupling through the changing structure⁴⁰ which embodies the organism's organization) between their internal organization and the changing conditions of their environment. This environment would not determine the path of such evolution. The environment merely constrains the potential for change of the organism's internal organization (Watzlawick, 1981: 328-330). In this respect, Winograd and Flores point out that,

"A plastic, structuraldetermined system (i.e., one whose structure can change over time while its identity remains) that is autopoietic will by necessity evolve in such a way that its activities are properly coupled to its medium. Its structure must change so that it generates appropriate changes of state triggered by specific perturbing changes in its medium; otherwise it will disintegrate" (1986:45).

This notion that views change as an outcome of processes of structural coupling between the internal organization of autonomous systems and variable environments, could be of value for social theory as a new insight into the relationships between the individual and society. It is an new insight which would preserve both the autonomy of the individual and the power of the social environment which constrains the former. At the same time, this view seems to allow for explanation in a unified, consistent way, both of the phenomenon of social change and that of social order (Buckley 1967: 26).

Among the sociologists, Blumer was one of the first to argue against the supposedly rigid constraints⁴¹ of social structures upon individuals, stressing the essential autonomy of these:

"The human being is not swept as a neutral and indifferent unity by the operation of a system. As an organism capable of self-interaction he forges his actions out of a process of definition involving choice, appraisal, and decision... Cultural norms, status positions and role relationships are only

frameworks inside of which that process (of formative transaction) goes on." (Blumer, 1953:199-201).

The notion of organizational closure would also lend a new meaning to the idea of purpose. Within this conceptual framework, a system would have purpose when it is organizationally closed and its operations are intended to produce and reproduce that condition, so that the system maintains itself as a self-producing unity. In a system of that kind, the immediate aim or purpose of each operation would be to make possible some other specific operations, because all of them are required to produce and reproduce the whole system (Buckley 1967: 52-58; Locker 1981: 219-221). Consequently, each specific operation would have not only an immediate aim (to make possible as its outcome other specific operations), but also a general aim which would be to reproduce the organizational closure of the system. In this sense, Varela proposes 'the autonomy hypothesis' according to which every autonomous system (capable of establishing their own goals and aims) would be organizationally closed.

As a working hypothesis I shall also assume that any system showing some sort of complex purposeful activity⁴², should have an underlying form of organizational closure which would give sense to that activity.

2.4 Action systems⁴³ as organizationally closed systems.

In the light of my heuristic hypothesis, social entities could also be seen as organizationally closed systems. These systems would be made of a fabric that is very different from the fabric constituting living beings in general: the elements which make up the organizational closure of living beings in general would be (in the last analysis) molecules that compose a self-producing network; whereas the elements which would constitute the organizational closure of (human) societies would be (in the last analysis) actions performed by social individuals which would also compose a self-productive network.

This social network can reproduce itself because its constitutive actions show some 'regularity': actors would consistently perform a specific sort of action in a given situation, and they would expect that the other actors involved in that situation would do the same (Mead G.H. 1934: 65-129). Now, according to my working hypothesis, which I am defining as a heuristic tool, the fundamental basis for that mutual congruency between the actions of different agents would be the interplay of reciprocal expectations. Certainly, these reciprocal expectations may not have a real basis (agents may be mistaken about such reciprocal expectations): others can have different expectations from those that we attribute to them, and vice versa, we can have different expectations from those that the others attribute to us. In this case, the process of interaction frequently breaks down. However, this process is not only able to survive such breakdowns but it can also produce and reproduce itself through them, by means of the generation of renewed interpretations, by the actors involved, of their own reciprocal expectations (Mead G.H. 1934: 70-71).

How would the consistency between those expectations, and the resulting regularities in actions that make up the fabric of social life, occur? This consistency would be possible because individual actors are assumed to be organizationally closed systems which, as I shall argue in Section 7 of this Chapter, can represent images of other organizationally closed systems, the other agents with whom they interact (von Foerster, 1991). In this respect it seems possible to draw an analogy between multicellular organisms and societies. A multicellular organism would be an organizationally closed system composed of units (the cells) which would also be an organizationally closed systems. As Maturana points out,

"Animals, as multicellular organisms, are autopoietic systems of the second order, integrated by the first order autopoietic systems (cells)".
(1988:5253).

The general organizational closure of the multicellular organism would be achieved by means of the organizational closure of the cells. Each cell would cooperate with the others in the task of generating an internal environment adequate for the preservation of its own closure, of its viability as a



living cell. This realization of the organizational closure of each cell would contribute to the realization of the organizational closure of the organism, and the latter would reproduce the conditions for the former.

Hence, according to this view, societies could be seen as organizationally closed systems of actions made up of units, each social individual⁴⁴ who would also be organizationally closed systems. If societies can be considered as organizationally closed systems, constituted by a self-producing and self-reproducing network of actions, it would be because social individuals can be viewed as organizationally closed systems which reflectively⁴⁵ represent each other and hence generate a tentative network of mutual expectations. This tentative network of expectations would always be conjectural and would strive to be realized through effective interaction.

From this point of view and more specifically, social individuals can be considered as organizationally closed action systems, which would be constituted by a self-producing and self-reproducing network of concepts, intentions, decisions, volitions, motives, etc. This complex network would generate the actions that those individuals perform (G. Pask; H. von Foerster, Steir. Apparently, social individuals act purposefully in order to achieve specific aims (Nowakoska, 1977; 1978). But this specific purposefulness would 'make sense' within and (because of) their general condition as organizationally closed systems of a peculiar psychosocial kind. Individual actors would be organizationally closed systems of a psychosociological nature, and they would need to produce and reproduce themselves in that condition. Arguably, human beings act purposefully because they need to produce and reproduce their own stability as psychosocial systems, and that stability would adopt the form of an organizationally closed individual action system basically composed of concepts (**what** can we do?) and intentions (**why** should we do it?) (Searle 1983, 1984).

According to this view, individuals would have to interact in order to maintain stability (Mead 1934: 250; Goffman 1959, 1963, 1975; Berger and Luckmann 1966). Such interaction would be a fundamental aspect of their organizational closure and an essential requisite for the maintenance of it, as feeding is an essential requisite for the maintenance of the stability (the

condition of organizational closure) of living beings (Maturana, 1980a, 1980c, 1984; Varela, 1979, 1980, 1984; Guiloff, 1981). As development psychologists have shown (McGurk, H. 1992) human beings could not become viable individual action systems without interacting with other agents. In fact, apparently, human beings generate their own image as agents through the image of other agents⁴⁶, and they produce those images through interaction (Mead, 1934; Berger and Luckmann, 1967; Astington, Harris and Olson, 1988; Bennet, 1993; Baron-Cohen, H., Tager-Flisberg, H. and Cohen, D. J., 1993).

In the light of the conceptual framework which is being used as a heuristic instrument, interaction would only be possible if the actors involved achieve a condition of structural coupling⁴⁷ between their respective individual organizational closures as psychosocial systems. That means that actors would accomplish the realization of their own organizational closure by means of the realization of the organizational closure of the other actors involved (in a manner analogous to the way in which any cell, in a multicellular organism, would accomplish the realization of its organizational closure by means of the cooperative realization of the organizational closure of the other cells making up this organism).

Through social interaction actors would achieve their own aims by taking into account the aims of the others, and by acting accordingly (Goffman, 1959:13-28; Berger and Lukmann 1967: 44-55). It is a process of mutual adaptation⁴⁸. In that way the individuals would generate the organizational closure of society in so far as they realize their individual closure as a psychosocial systems. And they do both things spontaneously, not as a result of a deliberate attitude: human beings cannot produce cannot be themselves without, at the same time, 'producing society' through their interactions (Berger and Lukmann, 1967). This mutual dependency between the production of the individual as a social agent and the production of social relationships with other individuals, would be particularly clear when one considers the process from an ontogenic point of view (Piaget 1932; McGurk, H. 1992). The notions of organizational closure and structural coupling seems to fit nicely into a general constructivist view such as that developed by Piaget (1975, 1980) in the field of psychology, which stresses the roles of both the individual and the environment in the production of social agency and social entities.

2.5. Meaning in organizationally closed systems.

The elements that, according to my heuristic model, would dynamically constitute an organizationally closed system, would have a characteristic property: they would possess a **meaning**. In general terms, the notion of 'meaning' can arguably be related to the idea of being an element that belongs to a closed organization (Pattee 1977). The situation would be quite the opposite when we consider organizationally open systems: their elements would have no meaning, they would exist merely on their own; they would not refer to each other because they would not belong to a self-producing network, within which they would play a specific organizational role. On the contrary the elements constituting an organizationally closed system would not exist merely on their own; they would refer to each other, because they would produce and reproduce each other in a cooperative network (Pattee 1977). That is why they seem to have a meaning, which would consist in the relationships that they would maintain with each other in that network. For example, a molecule of any of the four bases that constitute DNA is not 'just' a molecule with such and such inherent characteristics. As well as those characteristics, it has a meaning due to the fact that it belongs to a coding system which plays a central role in the organizational (molecular) closure of the living cell (Maturana 1973, 1975, 1980; Varela 1973, 1975, 1981; Pask, 1981).

From this point of view, one can put forward the hypothesis that all the functional elements of organizationally closed systems have some kind of meaning, in addition to possessing purely individual (physical, biological, neural, etc.) characteristics. Therefore, according to that outlook, where there is meaning, there would be some organizational closure underlying it, although frequently that closure is not explicit.

For example, computer programs undoubtedly have a meaning, but cannot be considered as organizationally closed systems in themselves: they do not produce and reproduce themselves, neither do they function by themselves. They need to be written/used by human beings. The organizational closure which gives them their meaning is provided precisely by the programmer/operator who works with them (computer programs have a meaning only because **human beings** use them, although these human beings, as users, tend

to ignore that fact)⁴⁹. It can be argued that no computer program would have meaning in the absence of a mind capable of understanding and using it. That is why human beings cannot 'communicate' with computers in the proper, human sense of that word. As G. Pask says,

"People talk through computers, using them to communicate with other people or commune with themselves. But they do not talk to computers. Nor do computers talk to them, if we mean by 'computer' a machine programmed in a conventional way and by 'talk' a conversation between individuals or between different aspects of the self" (Pask and Curran, 1982:91).

Most sociologists would agree that social entities are defined by some kind of meaning, relevant at least for the agents involved in them; consequently, according to the view that has just been outlined, there should be some form of organizational closure underlying that meaning. Now, arguably that organizational closure can only be provided, in the last analysis, by the mind of the individual subjects who give life to those realities. Unless we opt for hypostatizing⁵⁰ those meanings (for considering them as a separate substance, in which individuals would merely 'participate'), the meaning of social entities appears to lie in the mind of those subjects, and nowhere else. If

"The environment as we perceive it is our invention" (von Foerster 1981: 288),

then our social environment as we perceive it, would also be an invention (a **construction**) of our minds as social agents.

"... social meanings (which direct human behaviour) do not inhere in activities, institutions or social objects themselves. Rather, meanings are conferred upon social events by interacting individuals, who must first interpret what is going on from the social context in which these events occur. This emerging gestalt (the 'definition of the situation') is seen to result from the interplay of biography, situation, nonverbal communication, and linguistic exchange that characterizes all social interaction". (Schwartz and Jacobs 1979: 9).

According to this view, social meanings would be produced and reproduced in the process of the actualization of the individual, psychosocial, organizational closure of social agents. Only this closure would guarantee the maintenance of such individuals as viable agents, hence as social subjects, that is why that closure may also be termed as **agential closure**.⁵¹

The hypothesis that for individual social subjects, preserving their condition of (psychosocial) organizational closure of intentions and meanings (concepts), would be a fundamental requirement for their very survival as agents can be considered as plausible. When the agent loses the capability of guiding action through meanings and reproducing those meanings through action, her very existence as an agent as such would become endangered; anomie would set in.

As organizationally closed agential systems, social individuals would need to navigate the perturbations (influences of any kind)⁵² coming from the environment, without losing the condition of organizational closure (without disintegrating as a self-producing and self-reproducing systems). This need would be at the base of the permanent regeneration of meanings that social subjects would have to undertake in order to maintain their viability as agents (G. Pask and G. de Zeeuw, 1991).

It is in this light that, in the following chapter, I shall put forward the concept of 'self-perception system' to refer to the form of psychosocial organizational closure which supports the production and reproduction of the individual's social meanings.

*2.6. Informationally open systems*⁵³.

According to the argument so far, an organizationally closed system which is embedded in a perturbing environment⁵⁴, must assimilate the environment's perturbations through a change of its structure, if it wants to avoid disintegration. In other words, organizationally closed systems surrounded by a perturbing environment, and that in practice means **all real** organizationally closed systems, because all of them relate to some

environment, capable of perturbing them to some extent, must change their structure in order to preserve their organization, which defines them as closed systems. As indicated in Section 2.3, the structure of an organizationally closed system is the material realization of that system's organization. In all kinds of organizationally closed systems, and specifically in those of an agential kind, very different structures can play the same organizational role. For instance, verbal language obviously plays an essential role in human communication; but the sign language used by deaf mute people would also play an analogous fundamental role in human communication. Although it is quite different from verbal language, considering its structural characteristics, its organizational role would be equivalent (Sacks, 1989).

The possibility of realizing the same basic organization, by means of different structural embodiments, would be at the base of the phenomenon of structural plasticity. And this phenomenon, as already indicated in Section 2.3, would entail the potential for adaptation, and hence evolution, of those systems. From this point of view, organizationally closed systems should have some kind of plasticity, some ability to change their structure, maintaining their general organization, in order to survive through adaptation and perhaps evolution, amidst the changing perturbations coming from their environment⁵⁵. But this capability would be equivalent to those systems' ability to inform⁵⁶ themselves, in the original sense of this word, that is to say, to adopt new forms, as a result of their plastic relationship (through structural coupling) with the environment. It can be argued that organizationally closed systems that can change their structure according to changes in their environment, are also informationally open systems (systems which inform themselves, adopt new forms of organization along the process of structural coupling with their environment).

Arguably, the notion of information has several meanings. Those meanings depend on the kind of system to which that notion refers. Different kinds of systems entail different types of information. For example, a coin flipping system would be a system which merely selects one of two possible configurations: heads or tails. The information that the system produces would be the selection between two a priori possibilities (the measure of that information is just one bit). However, the concept of information as based on

the simple idea of selection among preestablished configurations, would not be powerful enough to mirror the informational complexity of organizationally closed systems such as living beings⁵⁷. It would be even less adequate to represent human informational capabilities. As I have suggested previously, the elements of those systems have a meaning; they carry **meaningful** information. The outcome of flipping a coin does not in itself carry any meaning (although, of course we, from the outside, can interpret that outcome, imposing a meaning on it). On the contrary, the outcome of a decision taken by a living being would carry a meaning (survival or death, for example).

It can be argued that the meaningful information which is characteristic of organizationally closed systems, and that makes itself explicit in the 'decisions' of those systems, can either remain always the same or change from time to time. In other words, the self-producing relationships between the elements can be fixed once and for all, or it can be redefined, thus generating other forms of organizational closure. Biological evolution provides an imposing example of the way in which organizationally closed systems can change their internal information without losing their organizational closure. On the contrary, they refine and enhance the complexity of it⁵⁸. According to the heuristic model which I am proposing, individual agents would also show that capability. For instance, consider some individual who drastically changes his environment (say, Marco Polo in the court of the Mongol Khan). In that situation, the individual subject, as an organizationally closed action system, would have to be able to cope with the new circumstances, first in a rather inefficient manner: he could only be able to interact at the most basic level. Progressively the subject would refine his abilities, as an organizationally closed system of interaction, in that environment. Of course, the process is interrupted if the subject makes a fatal decision (provoking the Khan's wrath at the cost of his head) that annihilate his very condition of survival in such a situation.

Classical cybernetic systems were defined as informationally closed; they had a given, closed, informational specification: Ashby, perhaps the most influential author in that field, defined cybernetics as "the science that studies systems open to matter and energy, and closed to information" (1956: 15). Non-classical cybernetics, on the contrary, contemplates systems which are not

only open with respect to matter and energy, but also with respect to information (Pask, G., 1982)⁵⁹, even though they remain as organizationally closed systems: they would be systems that change their organization without losing their viability as organized systems (their specific form of organization would change, but such systems would still be capable of maintaining their identity as organized totalities):

"... the typical response of open systems to environmental intrusions is elaboration or change of their structure to a or more complex higher level... This is true whether the system is the lowliest biological organism or a complex sociocultural system." (Buckley, 1967: 50-51).

Within those systems information would not only circulate but would also be created and destroyed⁶⁰. The idea of informationally closed/open systems may be clarified by means of a couple of examples: a game such as chess is an informationally closed system —the players just follow given rules, and they cannot change them at all. On the contrary, the kind of system that we call a natural language⁶¹, not only has rules, but also the capability for changing these rules in time. In this sense, a natural language would be an informationally open system. Similarly, in non-traditional game theory the players are allowed to negotiate game transformation processes in which they create new meanings and rules (Buckley *et al.*, 1974: 277-297 and Buckley 1977: 44); these games would also be instances of informationally open systems.

The ability of a system to be in a permanent process of change, maintaining at the same time its identity an ability which seems to be a characteristic of living systems, would be based on the interaction between those two properties of organizational closure and informational openness (Pask 1981); this interaction would not only be an essential requirement for the preservation of the organizational closure of many systems, but would also be responsible for the increase in complexity that those systems appear to display over time.

It can be argued that, although the notion of organizational closure has been mainly developed in the field of biology through the concept of

autopoiesis, and cybernetics through this concept of P-Individual (Pask, 1975: 302-304; 1976), social entities, in the light can also be conceived of as systems which are organizationally closed but informationally open, —or least, potentially open. This quality of openness would allow human social systems to be not only self-reproductive, but also self-productive, that is to say: capable of creating new meanings, and thereby, new relationships, structures, etc. (Morin, E., 1977, 1980, 1986).

According to the synthetic theory of evolution currently accepted, the overwhelming variety of forms that living beings take through the process of evolution, might be understood as a consequence of the self-productive potential (the potential for spontaneous variation) of those living beings, potential which is steered by, but not produced nor determined by their environment. Nobel Prize winner F. Jacob conceives of evolution as a process of "bricolage", through which organisms "make do" with their potential for spontaneous variation in order to face new environmental challenges (See Jacob, 1981, Chapter 2; also Jacob 1970; Barnet, 1962; Querner, 1971; Ruse, 1973; Piel et al, 1978).

In an analogous manner, the overwhelming variety of forms that human societies have taken through history, might be understood as a consequence of the self-productive potential of human social systems and, in the last analysis, of human social beings.

It can be argued that human societies cannot be properly conceived of as informationally closed systems. These systems would be incapable, by definition (see Ashby's definition above), of creating new meaning. At best, they would work as merely reproductive systems; novelty could not emerge within them and hence they would be incapable of evolution.

According to this conceptual framework, an organizationally closed system of a natural kind (generated without human intervention), which were devoid of informational openness, would be extremely fragile. Any substantial change in the environment would be fatal for the maintenance of the system's closure condition. Natural organizationally closed systems are 'robust' to the extent that they possess informational openness. The source of the outstanding

capabilities for informational openness which are characteristic of human societies, would lie in the informational openness of the actors who would be the basic components of those societies. These actors would be, as stated before, organizationally closed systems of a psychosocial nature. Their organizational closure as action systems would make them **purposeful** systems; and, as that organizational closure would be informationally open, this openness would make them **purposefully open** systems as well (Powel, Roice, and Voorhess, 1982).

Thus, it can be argued that the property of informational openness would enable social individuals to be not only purposeful systems, but also open, creative purposeful systems:

"Groupings of individuals seeking material and social goals in a physical and sociocultural environment generate meanings, interaction patterns, and ecological arrangements that are more or less temporary adjustments always open to redefinition and rearrangement". Buckley, 1967: 205.

Social actors would not merely follow a previously written script (Dreyfus and Dreyfus, 1986: 82 *passim*) when they behave as agents:

"Human intelligence by means of the physiological mechanism of the human central nervous system, deliberately selects one from among the several alternative responses which are possible in the given problematic environmental situation ... is this entrance of the alternative possibilities of future response... which decisively contrasts intelligent conduct or behaviour with reflex, instinctive, and habitual conduct or behaviour delayed reaction with immediate reaction" (Mead, G.H. 1934: 65).

It can be said that, in a way, human beings author their own parts. Even the most passive, conservative, unimaginative individuals seem to enact their roles in a personal way:

"The human being is not swept along as a neutral and indifferent unit by the operation of a system. As an organism capable of self-interaction he forges his actions out of a process of definition involving choice, appraisal,

and decision... Cultural norms, status positions and role relationships are only the frameworks inside of which that process of formative transaction goes on" Blumer, H. 1953: 199201.

It could hardly be otherwise if they are, as assumed, autonomous, organizationally closed systems. No person would be able to act for another, because there would be no action without a meaning, and meaning, according to the proposed view, would be an intrinsically personal creation of the individual's organizational closure. In line with the arguments already developed, meanings can be conceived of as individual products⁶². Certainly, individuals can communicate meanings; but from the heuristic point of view which is being assumed, this communication would be just a recreation of one's own meanings by the influence (through structural, behavioural coupling) of the meanings of others⁶³. Neither meanings would exist 'out there' nor could they be directly transferred from one mind to another⁶⁴.

This would be the reason why new (individual) meanings can and do arise in the course of interaction, and these new meanings could be the basis of social change. Consequently, the **person** in the sense of that organizationally closed system of a psychosocial nature which I have been referring to, would be the source of social creativity. The creation of new meanings and rules by the actors would modify the content of the specific communicative structure in which they are located, and it would reshape that very structure. As a result, the network of interactions between individuals would also change its features. This emergence of novelty is explain by Buckley (1967: 99):

"... the human individual not only controls but creates and recreates much of his effective environment. His ensemble of symbols represents mappings of possible behavioral relations with its environment, relations which are otherwise not given in nature but which may be continually created by the mutual stimulations and responses of gesturing individuals interacting in an environment".

2.7. *Reflectivity*⁶⁵

It is convenient now to address another notion essential to the conceptual framework which is being put forward in these pages. This notion is the idea of reflectivity, another concept characteristic of second order cybernetics. A system is reflective when the actions of its constitutive elements depend on the way in which those elements mirror the actions of the other elements (Astington, J. Harris, P. and Olson, D. 1988). Of course, in a way the actions of the elements constituting all kinds of systemic realities would depend on each other. For example, the change in direction of a billiard ball which collides with another depends on the direction, etc., of that second ball. But the mutual dependence between the elements that make up reflective systems would be of another kind; it would not be determined 'mechanically' by the independent characteristics of each element, but by the way in which each elements 'sees' (reflects) the characteristics of the other. This mutual dependence results from the images, distributed among those elements, of such characteristics. The elements in a reflective system would 'know', to some extent, each other, and therefore they be able to act according to this knowledge. Already some purely biological systems can be considered as reflective in that way. For instance, biologists have realized for years that the immune system apparently works on the basis of its ability to recognize its 'self' components from the 'other' components, which are systematically searched for and destroyed:

"... the immune system distinguishes between 'self' and 'other', between that genetically identical to the rest of the body, and that genetically alien".
(von Boehmer and Kisielow, 1991. See also Cohen, I.R. 1988; Varela, F. 1979: 211236).

A reflective system would be composed of elements which have some kind of knowledge about themselves and about the other elements, which would possess 'self-images' and 'otherimages'⁶⁶. This knowledge would allow those elements to mutually tune their reciprocal actions, which as a result of this, would not be purely mechanical, not a deterministic outcome of their independent characteristics⁶⁷. Giddens has argued that human beings, as social individuals, have images of themselves and images of the other social individ-

uals whom they interact with (Giddens, A. 1987: 151-156; 1984. XXXII-XXXVI). Consequently they would be reflective systems in that double sense (they are self-reflective⁶⁸ and other-reflective systems).

From a systemic point of view, Buckley, Morin, Baumgartner *et al.* had proposed that we consider social individuals (social actors) as self-reflective and purposeful beings:

"In addition to addressing itself to systems properties and dynamics, social system modeling and analysis should, in our view, entail concepts and methodology which enable specification of what actors, as purposeful, self-reflective beings, are all about, their decision-making and strategic capabilities, and their relation to systems dynamics and stability."
(Baumgartner *et al.* 1978: 28).

However, it can be argued that this self-reflective capability of actors should be understood in the double dimension already pointed out: as both self-reflective, and other-reflective. In fact, it appears that our own self-reflection ability depends on our capabilities of reflecting the others, and vice versa (Baron Cohen *et al.* 1993).

From this point of view, we would all be reflective elements in the social reflective system to which we belong.

"Society is a hyperreflective system, a reflective system made up of reflective elements (the individuals)", J. Ibañez, 1991: 17.⁶⁹

This would mean that sociologists are inevitably elements of the very systems that they study. According to this perspective, when sociologists want to face genuine social phenomena⁷⁰ they should relinquish their traditionally granted role as external, neutral observers in order to understand the specificity of the social system under scrutiny. Social systems would be a creation of their constituent actors, and sociologists who are social actors themselves, would be unable to avoid contributing to this creation with their research:

"The social researcher belongs to the same domain of reality that he investigates: 'the observer himself is a part of his observation' (Lévi-Strauss). This situation which seems to be an epistemological obstacle founds the possibility of his knowledge and extends the field of observation to his very subjectivity", J. Ibañez 1979: 34.

A process of social research would be an act of self-reflection, which would be done by the social milieu in which that process takes place. (Of course, not only the activity of sociologists, but any activity of understanding social reality by any social actor, would be a self-reflective process occurring within that reality) (Lamo de Espinosa, 1990). Modern social systems would be also reflective in that sense.

When this perspective is adopted, it can be argued that social theory has to recognize explicitly its reflective role (Garfinkel, 1967: 79), accepting that from a sociological point of view the only claim to "objectivity" that it can make stems from the fact that our societies confer on the sociologists' social actions as professionals -the elaboration of sociological knowledge- a privileged authority. But then that conferred authority, and the 'objectivity' arising from it, is in itself, a reflection of the kind of social subjectivity which is characteristic of modern societies. In a nutshell: social scientists, should feel committed, **qua scientist**, to the kind of 'objective knowledge' revealed by their research; but **qua social** they should understand that knowledge is a subjective self-reflection of the social milieu in which such knowledge arises⁷¹.

2.8. Communication.

As argued in the previous section, reflective systems would be better able to communicate through the reciprocal images that they generate. Too frequently, however, the phenomenon of communication is viewed by means of the 'traffic metaphor': communication is seen as something like the movement of a spectral entity (information) from one place (the sender) to another (the receiver) using a specific channel, by means of coding and decoding processes, etc. (C. Shannon 1949; Hund 1972).

Now, although that metaphor may be adequate to portray some of the external features of the phenomenon of communication, it can be argued that it does not properly represent the most basic features of that phenomenon. According to the conceptual framework developed so far, human communication would be a reflective process, through which the subjects produce and reproduce **their own images** of other subjects⁷². Human beings do not directly communicate with the others; they communicate with **their images** of the others (G.H. Mead 1934; Watzlawich 1967). From the point of view of the heuristic model which I am putting forward, communication would be, in essence, a process of structural coupling (by means of overt behaviour) through which each of the communicating agents would develop their images of the other agents and, along this process, their own self-images. That is the reason why communication frequently seems to break down, not at the level of its implementation (because of problems of transmission, of coding, decoding, etc.), but at a more basic level: because of a fundamental misunderstanding which would consist in a serious inadequacy between our images of the others and the others' self-images.

Usually we think that when we communicate we exchange information, as if that information were a sort of commodity (Pask 1975) which would change hands⁷³. In a way this is true, or at least it can be conceived of as an effect of the phenomenon that might be termed 'the fetishism of information'⁷⁴. From this point of view information would be transmitted through messages and these messages would be viewed as objective entities which would carry an inherent meaning. However, as von Foerster remarks

"It is not I, but the listener, who determines the meaning of my utterance"
(von Foerster 1991: 65).

From this outlook, very different from the one which is usually assumed, meaning would be either in the sender (as intended meaning) or in the receiver (as interpreted meaning), but never in the message as an 'objective' entity.

What is called here 'the fetichism of information' is called by others 'the illusion of communication' E. von Glasersfeld. He argues that:

"If the constructivist movement has done anything at all, it has dismantled the image of language as a means of transferring thoughts, meanings, knowledge, or 'information' from one speaker to another. The interpretation of a piece of language is always in terms of concepts and conceptual structures which the interpreter has formed out of elements from his or her own subjective field of experience. Of course, these concepts and conceptual structures had to be modified and adapted through the interaction with other speakers of the language. But adaptation merely eliminates those discrepancies that create difficulties in actual interactive situations adaptation ceases when there seems to be a fit. And fit in any given situation is not indication of **match**. To find a fit, simply means not to notice any discrepancies". (Steier, 1991:23).

Gordon Pask, in his 'conversation theory' (1972, 1976, 1988), has developed a concept of information which would avoid the fetishist reification of this notion. From his outlook, meaning, as I have argued previously, would be a production of the individual's organizational closure; it would always belong to, and would be located in, an individual. From this perspective, communication would be the process of changing (of productively reproducing) the particular meanings of several individuals through interactions between those individuals. This would be something that good teachers intuitively know: a teacher cannot just input new, alien meanings, within a pupil's head. A skilled teacher must rather help their pupils to develop their own stock of meanings in a way that makes it possible for those pupils to acquire the intended new meanings. This development would be guided by a subtle and complex process of interaction between teacher and pupil.

The units of meaning may be called concepts, in the sense given to this term by Pask⁷⁵. However, it can be argued that in order to make a concept meaningful, relevant to the subject who uses it, this concept must be the object of some intention of that subject. The hypothesis behind that proposition would be that we can only interconnect concepts through intentions (giving a rather broad meaning to the word 'intention', as Searle, 1983 does: 'to like', 'to

hate', 'to want', 'to wish', but also 'to know', 'to doubt', etc.). For example, suppose a person has the concept 'rambling'; it would be difficult to see how this person would have this concept without relating intentionally to it in some way, say, 'I love rambling', or 'I don't like rambling', or at least 'I know some people who love rambling', or, even, simply 'I know what rambling is'. All these would be different intentional ways of relating to the concept of rambling.

There is a tradition which views the process of communication as a purposeful and goalseeking activity (G.H. Mead, 1934; McIver, 1942). This goalseeking feature of communication can also be described in cybernetic terms, by applying the notion of organizational closure and structural coupling, already presented. From this point of view, it can be argued that concepts and intentions would relate to each other in a productive and reproductive way inside the universe of meanings of each individual: people would produce their concepts according to their intentions, and would apply their intentions to the concepts they produce, trying to maintain the organizational closure of their universes of meanings (that is to say, the coherence of these universes, Varela 1979: 12). Subsequently, communication between individuals would be a process of structural coupling (Buckley, 1967: 94) between such idiosyncratic universes of meanings: when people communicate with other people, they would change their individual universes of meanings by producing and reproducing images of the others which would force them to restructure their respective universes. As F. Varela argues:

"... meaning and understanding is relative to the recursive process of interpretation within the conversational unit" (Varela 1979: 269).

2.9. Complexity.

Social entities, as defined by the concepts outlined above, appear as systems which would be very different in their characteristic features and behaviour from classical systems such as (classical) mechanical systems (Buckley, 1967, Chapter 2). Edgar Morin's summarizes those specific features

which would make social reality so different from more simple kinds of systems:

"Society is all that forming ... complex unity, open, self-productive, reproductive of its constituents and of its forms, self-organizing, that is to say self-echoorganizing" (E. Morin 1984: 106).

Morin's recapitulation in *Sociologie* (1984: 429-430) gives us a summary of the typical traits of what he calls complex and hypercomplex systems:

a) In a complex system

"The entanglement of (its) interactions is such that it is impossible ... to conceive of them analytically. Consequently, if one wants to understand the whole of a system or even of a complex subsystem, it makes no sense to proceed by isolating variables".

Morin points to the fact that the interactions between the system's components are so complex that it is impossible to understand them by means of non-holistic or point-by-point analysis. And, for some purposes, it would be nonsensical trying to isolate some variables and analyzing them separately, because any relevant component of the system derives its meaning from its relation to the whole system. As a consequence of that, when researches try to grasp a complex system (for instance, a social system) analyzing it by means of a set of variables, they may be destroying what can be called 'context dependent meaning' of the system's elements. But these 'context dependent meanings' would define the system as such, they would constitute its very essence. The 'context dependent meaning' of the system's elements is made up of meaningful relations between meaningful units of that system, and neither those relations nor those units may be analytically broken down without loss of their corresponding meaning. To approach those systems from a non-holistic point of view would be equivalent to considering a text merely as a collection of letters (which would be its 'variables', each of them having a certain probability value). Therefore, I shall argue that one must use a holistic standpoint when dealing with social entities, and a comprehensive

methodology -along the lines advocated by Morin-, throughout the process of research.

- b) "Constraints and emergences appear and disappear in multistatic systems, that is to say they proceed by internal qualitative jumps, defying classical analyses".

This idea that complex systems work by what Morin calls qualitative jumps, implies that they do not work following classical continuous patterns. Systems possessing meanings are essentially discontinuous, because meaning requires contrast (with other meanings). The analysis of those discontinuous jumps which are characteristic of complex processes have been studied, in a mathematical context, by Rene Thom, in his Catastrophe Theory (1977a, 1977b)⁷⁶.

- c) "Complex systems work with a part of uncertainty (noise), whereas 'noise' perturbs machines".

As von Neumann remarked, living systems (contrary to mechanical ones) have a degree of reliability that is higher than that of each of their components. This is possible because those systems (and human beings to the utmost degree) have the advantage of being able to use uncertainty, chance, risk, even conflict and breakdown, in a productive way⁷⁷. They would be capable of this ability and would need to be to survive in an extremely complex environment. Needless to say this productive use of uncertainty, etc., seems to be a central characteristic of social entities.

Morin (1984: 431) considers animal and traditional or archaic societies as complex systems because in his view they have a strong hierarchy and their components have a strong and rigid specialization. In Bernstein's terms they would be systems with a strong classification and framing (1971a). Those systems would sieve any information coming from outside the system in such a way that they would reject as 'noise' the information incompatible with the system's fixed program. They would be systems in which the individuals usually understand their own behaviour in terms of fixed rules whose existence they tend to accept as given, without questioning.

On the other hand, Morin considers the human brain and—in some aspects— modern societies, as partially hypercomplex systems. Those systems would utilize randomness to enhance their informational structure. Hypercomplex systems would use chance, noise, uncertainty, conflict, as sources of (new) information, evolution and self-transformation. It would be unwise to try and establish clear cut boundaries for such systems, or to predict their behaviour as a consequence of their past. Hypercomplexity is imprecise (a problem that 'fuzzy set theory' is trying to face, L. Zadeh, 1971), partially disorganized, and constantly furthers change.

Morin's ideas seem to imply that the possibilities of changes in the Weltanschauung of human individuals—including the self-perception of them as social agents— would be expanded in a hypercomplex society. As a result changes occurring in social structures would have the opportunity to be visualized in different ways, and hence those structures would be much less stable than in the case of strongly framed systems (more exactly: they would develop a more complex, dynamic form of stability). Arguably, to understand hypercomplexity we would have to stretch Bernstein's notions of weak/strong classification/frame to its limits. The specific characteristic of today's hypercomplex societies appears to be the existence of contexts which, although strong, are at the same time dynamic. In modern societies change, at least some sort of change, economic development for instance, would be strongly framed.

2.10. Parts and totalities.

"The nature of the parts or components of a mechanical system are typically, relatively simple in their own structure, stable and not appreciably or permanently affected by being part of the system. By contrast, as we proceed up through the organic and sociocultural levels the components that are interrelated become more complex in their own organization, more and more unstable (more easily subject to change by small forces), and more fundamentally alterable by the working of the system of which they are a part. These features, of course, are all prerequisite to the very development of higher levels of organization" (Buckley, 1967: 46).

Luhmann like Buckley, Morin and others, has tried to apply the idea of complexity to the field of social theory. He proposes the following definition of complex systems:

"Systems can be designated as complex when they are so large that they cannot anymore link every element with every other one" (Luhmann 1981: 97).

However, as I have tried to show, complexity is not simply a question of systems composed of a large number of elements⁷⁸. Luhmann himself, points to other factors underlying the phenomenon of complexity (N. Luhmann 1984: 107).

The crux of the argument is that the relations between the elements of a complex system are not mechanical, they are not merely a result of the intrinsic, independent properties of those elements. Hence according to the line of argument I have built up, a complex system cannot be comprehended by means of an atomistic approach looking at the elements one by one. Besides, as Atlan (1981: 186) suggests,

"... a system appears **complex** when we do not know how to specify it completely although we know enough about it to call it a system".

When we face a complex system 'we feel' its systemic reality although we cannot pinpoint the particular processes through which that reality is actualized⁷⁹. The system as a whole would not reducible to the sum of the parts we can visualize (Heylighen 1991).

According to the conceptual framework so far put forward, in many complex systems —among them living beings and social entities— the complexity of the system would arise from the phenomenon of reflectivity. Consider a multicellular organism: it would have a reflective structure, in the sense that each of its basic components (each cell) mirrors, in a way, the whole organism to which it belongs, because each cell possesses the genome which represents the blueprint capable of guiding the building of that whole organism. As a consequence, multicellular living beings many plants and some

animals can reproduce themselves as totalities from their parts: a cutting of a plant can generate the whole plant. In this sense, it could be argued that multicellular organisms are holographic realities⁸⁰. They would be reflective systems constituted by the interplay between units (the cells) which have 'images' of the systems as a whole, and which could concurrently produce such systems through those images.

Social entities, as argued, would also be reflective systems. In this case the basic units (the individuals) consciously reflect, in an idiosyncratic way, (a version of) the whole system to which they belong, and would concurrently constitute that system through (inter)actions performed on the basis of their individual images of it.

The impossibility of attempting to apply an analytical approach to those systems would not originate in the fact that they are very 'complicated' (because of the number of elements, or the complication of their relations (Lofgren, L. 1977)), but in the fact that they would embody a more intractable form of complexity: the reflective organization that would be characteristic of those systems.

Human societies could be complex systems in that definite sense; they would be social systems which, as argued, would be constituted by other social systems: the individuals making up those societies. From the point of view assumed as a working hypothesis in these pages, and which will be developed in the next Chapter (see Section 3.5), social individuals **would be social systems**; they would be social systems that would mirror the social system which includes them. Of course they are a part of that system; but each of them would reflect in a peculiar way, that whole system. It can even be argued that such a system would only exist as the collection of all its individual reflections (P. Navarro 1991). When we view society from that perspective, it appears as a **holographic domain**: each element belonging to the totality would mirror and constitute that totality through its reflection of it (Morin, 1986: 101-108). As a consequence any such totality would have no clear cut limits: each individual would determine those limits in an idiosyncratic way. It would be this **fuzzy condition of social entities** which is the factor that would enhance their outstanding plasticity.

When assuming this outlook, it can be argued that the evolution of a social totality would depend on the concurrent evolution of its mirroring parts (basically, the individuals composing it). Each social actor would struggle to impose her own perspective about what social reality is, and this struggle in which all social agents are involved, would determine the shape of that reality, which in turn, as suggested, would be the collection of all those individual perspectives. In that sense, it could be argued that the basic and most important kind of social phenomena are social individuals⁸¹. To understand the psychosocial organization of social individuals would mean to understand the society which they make up, because that society would be a reality emerging from the concurrence between those individual organizations. If this outlook would be shown as correct and if the parts could be effectively viewed as reflecting the totality, and this could be consistently conceived of as emerging from the concurrent activity of those parts, then social theory would be in a position to bridge the gap between the micro and the macro levels of analysis. R.F. Geyer and J. van der Zouwen (1978: 2) focus on that issue, arguing that:

"Modern cybernetics makes it possible to bridge what one might call the 'micromacro gap' the gap in social science thinking between the individual and society, between freedom and determinism, between 'anaskopic' explanations of society, departing from the activities of individuals conceived as goalseeking, regulating systems and 'kataskopic' explanations, which view society 'from the top down' and see individuals as subservient to system level criteria for system stability."

The consideration of social individuals as organizationally closed, informationally open (productive, not only reproductive), purposefully open, and other/reflective systems, will constitute the hypothetical conceptual framework upon which I shall formulate the basic notion of a self-perception system. This heuristic notion will provide the theoretic basis of this dissertation. Because of its fundamental role in it, I shall elaborate the concept of self-perception system' at length in the following chapter.

NOTES TO CHAPTER 2

¹ Zeleny (1980: 31-39) outlines a historical review of the use of the notion of system in social sciences from the XVIII century to the first quarter of this century.

Buckley (1967: 8-36) also reviews the use of the concept of system from the XVII century on, considering the mechanical, organic and process models of system.

² R. K. Merton (1968, chap. 3) has outlined the fundamental postulates of the functionalist approach in relation to the understanding society as a functioning unity.

³ Organic or organismic analogies would not be the same as biological analogies in general. An organic analogy is just one kind of biological analogy, the one that would assume the model of the living being typical of nineteenth century biology (Taton *Historia Natural de las Ciencias*, Vol. 3: 546-549) Contemporary biology views the living being not just as a set of interconnected organs, but in a much more complex, deep way (molecular biology, neuroscience, etc., see H. Atlan, 1979).

⁴ A. R. Radcliffe-Brown realizes that morphogenesis —what he calls 'development'— poses a problem, but he refers that problem to what he calls 'historical explanation', which would be distinct, although complementary, to the 'functional explanation'. A. R. Radcliffe-Brown, 1952: chap. 9.

⁵ "regrettably small number of social scientists have approached the sociocultural system from the moderns systems perspective to any serious extent" Buckley 1974: 383.

⁶ In fact the public introduction of Artificial Life took place in a first conference in 1987. Langton, Ch. (ed.) (1989) *Artificial Life I*. Proceedings of the First Conference on Artificial Life. Los Alamos, September, 1987. Addison-Wesley.

⁷ The objectivistic view would be based on the principle of objectivity as stated by von Foerster:

"Objectivity: the properties of the observer shall not enter in the description of his observations.

Post-objectivity: the description of observations shall reveal the properties of the observer" 1981: xvi.

This objectivistic point of view is called by G. Pask 'classical' and he defines it as:

"Most scientific writing, even in behavioural science, takes it for granted that an observer can, in principle, act as a numinous and unbiased entity called an external observer. This point of view is embeded in part but not all of system theory.

An external observer may make measurements, to determine the state of an observed system for example. Should he partition the system (for instance, into a 'black box' (Ashby, 1964c) called an organism and other 'black box' called its environment) he comes, by dint of observation or auxiliary data, to entertain detailed hypotheses...

The detailed hypothesis ultimately arrived at are causal. The organism and the environment are conceived as certain kinds of machine. The observer believes, with certainty or just statistically, that each output was **caused** by some input, or some input output history...

Moreover, the external observer is causally related to the system under observation; he necessarily conceives it impersonally and refers and refers to it as it. One useful consequence of this fact is that he can consistently entertain the notion that the system has, in principle, a state and that one, and only one, state occurs at once. The state transitions are ordered, and this order is interpreted as temporal ordering and can be determined by an observational clock. Its internal clock may be synchronised with this clock in principle at least, in the following sense: any process serially executed or not is **equivalent** to a serial model within this frame of reference.

As part and parcel of the same issue, only the external observer is allowed to make distinctions and to engage in certain other operations which are noted below. The distinction between organism and environment, for example, is of his making; the organism is deemed incapable of such an activity. If an event of this kind occurred in would either remain unobserved or be blamed upon a chance process" 1975: 81-82.

⁸ The 'relativistic' and 'reflective' paradigms of non-classical cybernetics is developed by G. Pask as follows:

"In a reflective theory, the external observer's special position is lost; with minor caveats he becomes a participant. Further, any reflective theory is prone to paradoxical situations engendered by the possibility of self reference. In **general**, such a theory does not tally with a classical theory; though in special but important cases it does so.

A **relativistic** theory/model/experimental method is necessary in so far as the organism (more plausibly, the subject) engages in activities such as exploration, attention direction or non-trivial learning in which he exerts control over his environment and consequently changes the universe (either real or modelled) in which he operates... If the subject is **designated** to act in this manner and it is desired to study the phenomena (learning or exploration) that cause the trouble, then a classical model is inapplicable. In order to achieve closure at all, the subject's excursions must be compensated and founded within a (larger) universe... Under these circumstances, the constancy required for any kind of external observation is maintained by a compensating regulator and the 'constant condition' is a dynamic but stable **interaction** between the subject and the regulator....

Instead of regarding the subject as a system (such as a system in classical physics), with input and output it would be possible to regard **him** (now **him** quite seriously though) as a unit of interpretation, a symbolic structure...

Whenever the external observer's position is abraded, the theory and the methods and models associated with it, becomes **reflective**. G. Pask, 1975: 83-96.

⁹ See Luhmann [1984] (1990); Izuzquiza (1990); Dupuy (1983, 1986, 1990, 1991).

¹⁰ See Morin's notion of the social system as a natural **génératif/phénoménal** system which evolves from basic **géostructures** to culture and even to the formation of a nation (Morin 1984:101-118 and 129-138). From a different perspective see Luhmann's analysis of social differentiation and his study of what he calls social subsystems: economy, law, politics, science, religion, education, etc. (Izuzquiza, 1990: 281-309).

¹¹ Von Foerster (1981:4) defines a **self-organizing system** as the system which "is in close contact with an environment, **which possesses available energy and order**, and with which our system is in a state of perpetual interaction, such that it somehow manages to 'live' on the expenses of this environment".

¹²In his paper "Society as a complex adaptive system" (1974:497) Buckley argues: "The unit of dynamic analysis thus becomes the **matrix** of interacting, goal-seeking, deciding individuals and subgroups... seen in this light society becomes a **continuous morphogenic process**, through which we must come to understand in an unified conceptual manner the development of structures, their maintenance and their change".

¹³ "The word 'Cybernetics' was first used by Ampere as the title of a sociological study. It is derived from the Greek word for steersman". Pask 1981: 15.

¹⁴ Walras considered that the consumption activities, business and factories cannot be understood isolated one from the others, neither can be contemplated apart from the whole economic activity. Barber, 1974: 186-191.

¹⁵ Many authors who do not belong to the systemic tradition, can be interpreted in a systemic light. For instance, G.H. Mead. Although this author did not formulate his own work in a systemic framework, Buckley refers to him in the following terms: "For Mead and his associates, the entity 'society' come to be seen clearly as an open, ongoing transactional system of interacting, interpreting and deciding individuals. Such a position... is congenial to the modern systems view". (Buckley, 1974: 384).

¹⁶ In this respect Parsons seems to be under the influence, as Almaraz (1981:417-430) points out, of the unifying outlook of Bertalanffy's 'General Systems Theory'.

¹⁷ "The relation between presence and absence of a feature, as experienced by the actor, may be called a **distinction** between the two situations... The difference between a closed, hence invariant, distinction and a variable distinction may be illustrated in the following way: consider a wall on the surface of the earth. Standing near the wall there seems to be a clear distinction between "this side" and "the other side" of the wall. However, if you follow the wall until the place where it ends, you will be able to walk to the other side without having to cross it. Hence the distinction is only local, relative or subjective, depending on the position from where you look at the wall. On the other hand, if the wall form an uninterrupted, closed figure, e.g. a square or a circle, it would not have an ending, and you would follow the wall indefinitely without finding an opening to the other side. In this case the distinction between "this side" and "the other side" would be absolute or invariant. Hence "closing" a system can be seen as filling the gaps by adding the "missing elements". Heylighen 1991: 43, 50-51. See also Spencer Brown G. (1969); Goguen, J.A. and Varela, F.J. (1979).

¹⁸ "The closure of a system can be defined as the **internal invariance** of a distinction (or distinction system) defining the system... Internal invariance means that the distinction is mapped upon itself during the application of transformations inherent in the system. Such a "transformation" is merely a different word for a subsystem, since each (sub)system can be viewed as a relation transforming input into output... The closure of an assembly of subsystems then signifies that the subsystems are connected (through their input and output) in such a way that some overall order structure or organization may be distinguished, which is invariant under the dynamical processes by the interaction between the subsystems. Un example of such an organization is that of an algebraic group... Whatever the dynamics of the system activating one transformation after another one, the resulting changes will always

remain "within the system". A so-called **second order change** (cfr. Watzlawick *et al.*, 1974), "jumping out of the system", is only possible if the group structure is broken up". Heylighen F. 1991:49. "Classical representation may thus be characterized as maximally invariant distinction systems. This entails all the typical features of classical mechanistic theories: determinism, reversibility, causality, absolute space and time, Boolean logic, perfect rationality... All phenomena were something qualitatively new emerges, e.g. thermodynamical self-organization, biological evolution, most cognitive processes, socio-cultural evolutions... , can be characterized by differentiation, i.e. the creation of new distinctions. Such phenomena simply cannot be represented within a classical theory". Ibid.:45-46. According to Heylighen, classical mechanics, for example, would assume a classical, distinctionally closed, descriptive framework.

The idea of a system as **distinctionally closed/open**, should not be confused with the notion of a system as closed/open. The first idea considers the system from an epistemological point of view. It refers to the constitution of the (conceptual) elements composing the system. The second notion refers to the way in which the system relates to its environment:

"Most organic systems are **open**, meaning that they exchange materials, energies, or information with their environments. A system is **closed** if there is not import or export of energies in any of its forms such as information, heat, physical materials, etc., and therefore no change of components. Mackay, 1967.

19 "... we are dealing with a system of interlinked components that can only be defined in terms of the interrelations of each of them in an ongoing developmental process that generates emergent phenomena —including those we refer to as institutional structure." Buckley, 1967: 125.

20 From G. Spencer-Brown's seminal notion of distinction (see section 2.3 below), the notion of distinctionally closed system has been developed by H. Maturana 1981: 31-32, H. Von Foerster (1981); G. Pask (1976) and F. Heylighen, among others.

21 The origin of this type of fixed, instrumental truth is described by Popper in *Conjectures and Refutations*, Chap.3 (1968).

22 As Buckley (1974: 497) argues: "Much of modern sociology has analyzed society in terms of largely structural concepts: institutions, culture, norms, roles, groups, etc. These are often reified, and make for a rather static, overly deterministic, and elliptical view of societal workings".

23 The 'structural functionalist outlook' (from Durkheim, 1895, to Lévi-Strauss, 1957, including names such as Radcliff-Brown, 1952, and Malinovsky, 1927) originated and developed mainly in the context of the study of primitive cultures. These cultures, in general, appear to the anthropologist as nonhistoric, and are usually analyzed from a strictly synchronic point of view.

24 When he refers to what he calls "synchronic linguistics", see Sausure 1916, Chapter III.

25 This author also views language as a functional system, but stresses the relationship between the dyachronic and synchronic aspects of such a system: "The conception of language as a functional system must also take into account the study of the past states of language... It

is not possible to establish impervious barriers between the synchronic and diachronic methods, as the school of Geneva has tried to do". Quoted by G. Mounin, 1972, Spanish version, 1976: 151.

²⁶ See Buckley (1974:383) above.

²⁷ Von Foerster, 1980: 102-105; 1991:65; G. Pask, 1975, 1976, 1981; Maturana and Varela 1980:107-111; Winograd and Flores, 1987;...)

²⁸ Geyer and van der Zouwen (1990:7) explaining the notion of **self-referencing** say: "One of the main characteristics of social systems, distinguishing it from many other systems, is their potential for self-referentiality. This means that the knowledge accumulated by the system itself about itself, in turn affects the structure and operation of that system".

About society as a reflective system see also Chapter 5 of Lamo de Espinosa's *La sociedad reflexiva*.

²⁹"... a distinction is drawn by arranging a boundary with separate sides so that a point on one side cannot reach the other without crossing the boundary. For example, in a plane space a circle draws a distinction...There can be no distinction without motive, and there can be no motive unless contents are seen to differ in value." Spencer Brown, 1969: 1.

³⁰ "I propose to continue the use of the term "self-organizing system", whilst being aware of the fact that this term becomes meaningless, unless the system is in close contact with an environment, **which possesses available energy and order**, and with which our system is in a state of perpetual interaction, such that it somehow manages to "live" on the expenses of this environment" Von Foerster, 1981: 4.

³¹ "The notion of organizationally closed and autopoietic systems has been invented more or less independently and in various context, though the term itself and its careful application to living systems is due to Maturana and Varela. For example, much of von Newmann's work on reproductive automata and the content of the early Macey Foundation meetings on cybernetics refer to similar constructs. So, on serious examination, does von Foerster's first enunciation of "Self Organization" in 1958, as does McCulloch's notion, "Redundancy of Potential Command". Much the same is true of work in other disciplines, including that of Wiener and Svoboda in mathematical cybernetics, Herbs in logic, Bateson and Mead in social anthropology, Waddington, Tyler Bonner, and others in embryology and genetics, Wynne Edwards in ethology, Ackoff and Beer in operational research, and numerous cosmologists and theoretical physicists. The list is enormous, because this quite basic reappraisal of what systems are and what stability is reflects a very fundamental change in thinking. Only in recent years, however, has there been either the language required to express the pertinent notions or a sufficiently large body of shared concepts to render these notions communicable and generally intelligible." G.Pask 1981: 265.

³² "In 1973 Francisco Varela and I proposed that this organization of living systems is one of strict **self-reproduction**,... and, after making it fully explicit, we called it the **autopoietic organization**, choosing a word without history so that it could be used exclusively to refer to the definitory organization of living systems.

Autopoiesis (autós = self; and poiein = to produce)". Maturana, (1980: 52).

Varela (1979: 13) proposes a more detailed definition of an autopoietic living machine:

"An autopoietic system is organized (defined as a unity) as a network of processes of production (transformation and destruction) of components that produce the components that: (1) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produces them; and (2) constitute it (the machine) as a concrete unity in the space in which they exist by specifying the topological domain of its realization as such a network".

³³ "The idea of **permanent autoreorganization** as presented by Atlan (1972) is central in clearing the way for the idea of autoorganization and the idea of autopoiesis" Morin, 1981: 129.

³⁴ See von Foerster definition of 'self-organizing system' in note 11 of this Chapter.

³⁵ In other words they would be capable of organizational adaptation. We consider here 'adaptation' in Maturana's terms: "**adaptation** is a universal phenomenon that takes place whenever a composite unity undergoes recurrent interactions with structural change but without loss of organization". H. Maturana, 1981: 29.

Maturana and Varela (1980: 137-138) define the concepts of organization and structure as follows:

Organization: the relations that define a system as a unity, and determine the dynamics of interaction and transformations which it may undergo as such a unity, constitute the organization of the system.

Structure: the actual relations which hold between the components which integrate a concrete machine in a given space.

Zeleny's definitions of these two concepts are perhaps clearer:

Organization. A complex of relationships among components and component-producing processes that must remain invariant in order to constitute a unity distinguishable within its unity class.

Structure. A particular spatiotemporal arrangement of particular components through the underlying organization is realized in a given space and at a given point in time. Zeleny, 1981: 5.

³⁶ "These systems which generate their own causality cannot be causally explained any longer... they presuppose themselves as production of their self-production". N. Luhmann (1984) 1990: 107. Apparently Luhmann means that these systems cannot be explained by any sort of external, deterministic causation.

³⁷ The Greek word 'autonomous' literally means self-law, in the sense of living under one's own laws. See Luhmann's quotation above.

³⁸ Schrödinger (1945) understands that closed systems tend to increase in entropy; whereas open systems are 'negentropic' (tending to decrease in entropy) or to elaborate a structure.

³⁹ 'Structural coupling' in the sense given to that expression by Maturana and Varela. In **Autopoiesis and Cognition**, they give a short definition:

"Coupling (of unities): whenever the conduct of two or more unities is such that the conduct of each one is a function of the conduct of the others." pp. 136.

In "Autopoiesis: Reproduction, Heredity and Evolution", Maturana develops the concept of 'structural coupling' in more detail:

"In fact, phylogenic adaptation is not the result of selection in a phylogeny, but, on the contrary, every particular lineage in a phylogeny is the result of selection in a field of adaptations recursively produced through the sequential generation of historically coupled unities. This condition of phylogenic adaptations I prefer to call **phylogenic structural coupling**. This expression makes a direct reference to the phenomenon of operational structural complementarity with the medium. This fact determines whether a particular unity participates or not in the continuation of a genetic lineage, as well as the resulting recurrent selection of such a structural complementarity that a phylogeny entails. Viewed in this historic perspective, a genetic lineage appears to an observer as a succession of unities of the same class that exhibit sequentially changing structures with respect to some original reference, under the conditions of invariant structural coupling with the medium in which they were successively realized as sources for the next generation. This process of historical structural change through continuous structural coupling with a medium is, I think, the **essence of the phenomenon of evolution**" H. Maturana, 1980: 69.

⁴⁰ See the notion of 'structural plasticity' in note 30.

⁴¹ Here 'rigid constrains' means 'instructive constrain', in the sense given to that expression by Varela.

⁴² There are simple forms of apparent 'purposeful activity' (activity guided by an aim) that are characteristic of organizationally open systems. For example, the 'aim' of a pendulum would be finally to stop in a vertical position. The 'aim' of those systems would be just the stabilization of their dynamics. I am referring to purposeful activities of a more complex kind which would not end in an ultimate fixed state, but would allow the system to continue their own dynamics, perhaps in a new form. See Gleik, J. (1987).

⁴³ The words 'action' and 'agent' will be used exclusively to refer to human action and to human agency. Animals are also, in a way, 'action systems' but they are not agents in the proper human sense, and their 'actions' are very different from human actions.

⁴⁴ Luhmann, holds the view that the ultimate elements of social systems are actions (1978: 100). Although he also argues that "It is generally accepted that only the actor can constitute the unity of an action" (1978: 109).

⁴⁵ The concept of reflectivity will be explained later in section 2.7 of this Chapter.

⁴⁶ "Evidence provided by Wimmer and Hartl, 1991, and Wimmer, Hogrefe and Perner, 1988, (shows) that children do not find it easier to attribute mental states to themselves than to others", Leekam, S., 1993: 32.

⁴⁷ See the concept of 'structural coupling' in note 38 of this Chapter.

⁴⁸ 'Adaptation', in the sense given to this term in note 35 of this Chapter.

⁴⁹ "Is a program part of the computer or part of the operator? Today computer users tend to act as if the program were part of the computer, not least because virtually all modern computers have some sets of instructions (including language compilers) built into them... The program -the software causes the computer to carry out the programmer's instructions in a set sequence. The writer of the program may not be aware in what order the machine will actually implement his or her instructions... Nevertheless the computer can only act according to the rules spelled out by the programmer, whether or not the programmer can predict how the program will run". G. Pask, & S. Curran 1982:13-14.

⁵⁰ This substantializing outlook was explicitly adopted by Durkheim. Among today's social theorists, Luhmann has formulated this view: "**Society is composed of communications...** Obviously society presupposes men and human actions, but they are not part of society... men never are a part of society, they belong to its environment". I. Izuzquiza, 1990:12.

⁵¹ "A cognitive system is a system whose organization defines a domain of interactions in which it can act with relevance to the maintenance of itself, and the process of cognition is the actual (inductive) acting of behaving in this domain" Maturana, H. 1970: 13.

The peculiar domain of interactions of human beings is made up by other human beings with whom they have to coordinate their actions through meaningful exchanges.

"If one person's utterance is not intelligible to others, or if its interpretation by the listener is not consistent with the actions the speaker anticipates, there will be a break down. This break down... results in the loss of mutual trust in commitment... The need for continued mutual recognition of commitment plays the role analogous to the demands of autopoiesis in selecting among possible sequences of behaviour". Winograd, T. and Flores, F. 1987: 62-63.

⁵² "A 'perturbation' is simply what changes, moves a system from a state to another" Ashby, 1956: 110 (page number of the Spanish 1976 edition).

⁵³ The notion of 'informationally open systems' is used here in Petri's sense. See Reisig W. (1982); Rozenberg G.(ed) (1982). Gordon Pask (1990: 5), explains the meaning of this notion when describing the characteristics of what he calls 'organizationally closed and informationally open systems': "(I am) using the term 'information' in, roughly, the sense of Carl Adam Petri, to mean the becoming of a coupling between otherwise independent systems, or equisignificantly, the becoming of a synchronization between hitherto asynchronous systems".

⁵⁴ Any environment —unless it is an absolute vacuum, which would not be properly speaking an environment—, influences the system which it surrounds. This influence has the form of some kind of mater/energy flow impinging upon that system and perturbing it.

⁵⁵ R. Thom argues that a subject is an 'actant' who remains (survives) identical after passing through a catastrophe (1977: 295).

⁵⁶ "To use the word information in its more original etymological sense of **in-formare**, to form within... **We can define in-formation as the admissible symbolic descriptions of the cognitive domains of an autonomous system.** F. Varela, 1979: 266.

- 57 Because they would be, as argued in Section 2.2, distinctionally open systems.
- 58 "The maintenance of identity and the invariance of defining relations in the living unities are at the base of all possible ontogenic and evolutionary transformation in biological systems". Varela, 1979:5.
- 59 "The order-from-noise principle (von Foerster) and its later development as a principle of information or complexity from noise (Atlan) have helped us to understand in the language of and without contradicting the Shannon theory how information can be created. It has further been used as a basis for a theory of self-organization". Atlan, H. 1981: 185.
- 60 "We shall treat (define) **information as that kind of resource which is used to resolve conflicts.**" Petri, C., 1980: 9.
- 61 "Languages can be divided in **natural** (called sometimes **ordinary**) and **artificial**. Natural languages are the ones produced in the course of psychological and historical evolution; samples of such languages are Coptic, Greek, Spanish. Artificial languages are the ones built following some formal rules; samples of such languages are logic and mathematics." Ferrater Mora, 1979, Vol. 3: 1941.
For a more detailed definition of 'natural language' see also Dunlop E.M. and Fetzer, J.H. 1993: 88-89.
- 62 In 1956 B. Bernstein realized an experiment looking for the structure of latent meanings in a conversation or in a piece of writing and he concluded that "The space between lines was the listener or the reader's space out of which he created a unique, unspoken, personal meaning" (1971) 1974: 6.
- 63 G. Pask argues that meaning supposes an agreement between two or more participants to share an understanding: "The participants who agree have been able to interpret a relation... in some world... and they agree that these interpretations (of the relation) are the same, or are within tolerance" (1976: 150).
- 64 "To perceive or recognize a book (or anything else) is to find something in one's experimental field that fits one's concept of 'book'. It does not mean that a 'real' or 'ontic' object that is a book has to be there before one has seen it as a book". Von Glasersfeld 1991: 17-18.
- 65 "Notions of reflexivity and self-reference that turn on themselves, that need themselves to come to into being, that preserve the tie between observer and observed, speaker and speech, and partners in dialogue are now at the core of at least five branches of science and philosophy. They are in biology 'autopoiesis' (Varela *et al.*, 1974); in mathematics 'Eigenvalues', 'Eigen-behaviour' (von Foerster, 1976) and 'attractors' (Abraham and Show, 1981); in logic a 'calculus of self-reference' (Varela, 1975); in linguistics 'performance utterances' (Austin, 1961); in epistemology 'reality as (social) construct' (Watzlawick, 1984)" H. von Foerster 1991: 66.

⁶⁶ Many animal societies establish their boundary as such societies by means of that ability to recognize 'self' and 'other'. For instance, the rats belonging to a colony can detect, foreign rats to which they attack, through smell.

⁶⁷ F. Steir applying this idea of mutually constructed images (self-image or others-image) to social research calls the subjects of his researches 'reciprocators': "to call those who participate with me **reciprocators**, for it is only by hearing me and answering me that a 'me' can emerge as an I who does research" (Steir, 1991: 165).

⁶⁸ "Auto-reflection, that is, the ability to split the being in two, to consider oneself subject and object at the same time". E. Morin 1981: 135.

⁶⁹ See also Lamo de Espinosa, 1991.

⁷⁰ By 'genuine social phenomena' I understand those which involve some aspects of the subjectivity of a specific human group. For instance the distribution of blood groups among a given population would not be a genuine social phenomenon in that sense, whereas the attitudes as consumers of the individuals belonging to that population would be a genuine social phenomenon.

⁷¹ "The first cut, the most elementary distinction we can make, maybe the intuitively satisfactory cut between oneself **qua** experiencing subject on the one side, and one's experience on the other. But this cut can under no circumstances be a cut between oneself and an independently existing world of objective objects." Varela, 1979: 275.

⁷² "The new, demanding requirements of coordination, anticipation, expectation and the like within an increasingly complex **social** environment of interacting and interdependent others—where the genetic mappings were absent or inadequate—prompted the fairly rapid elaboration of relatively new features in the social system. These include, of course: 1) the ever-greater conventionalizing of gestures into true symbols; 2) the development of a "self", self-awareness, or self-consciousness out of the symbolically mediated, continuous mirroring and mapping of each person's own behaviours and gestures in those ever-present others (a process well described by John Dewey, G.H. Mead, Cooley, and others); and 3) the resulting ability to deal in the present with the predicted future as well as the past and hence to manifest conscious goal seeking, evaluating, self-other relating, norm referring behaviour." Buckley, 1967: 65.

⁷³ "**Information** in its most general sense is seen, not as a thing that can be transported, but as a selective interrelation or mapping between two or more subsets of constrained variety selected from large ensembles". W. Buckley, 1974:509.

⁷⁴ Marx wrote about the fetishism of the merchandise, which is somewhat analogous to that fetishism of information. *El Capital*, Libro I,: 36-48 (Spanish edition, México, F.C.E, 1971).

⁷⁵ "A concept is an abstract or general idea that we use to organize our thoughts and experiences... but there are other aspects of a concept that are worth stressing. First, a concept is possessed by an individual. The words we use to designate concepts are common to many individuals but the content of each person's concept is unique. Our concept of a factory will

not be the same as your concept of a factory, though our concepts have enough in common to make it possible for us to discuss factories without confusion. Second, most of our concepts are in flux, we develop and adapt them as we go along. We try to form them into a reasonable ordered hierarchy of ideas and experiences, and in general we adopt a pragmatic attitude to overlaps. Third, we build elaborate concepts out of simple concepts, although not necessarily by the same route. 'Factory' to you might primarily mean 'building', 'product', 'process' and 'manager', while to us it might conjure up 'product', 'assemble line', 'manager' and 'building'. We both arrive at the same concept by different route, and use slightly different building blocks." G. Pask, 1982: 72.

⁷⁶ See also Woodcock A. & M. Davies, 1978.

⁷⁷ Gordon Pask stresses the importance of conflict and conflict-resolution in the self-organizing processes that are characteristic of complex systems: "What do we mean by conflict? Basically that two or more time sequences of computation which may have been proceeding in parallel interact. Instead of remaining parallel and (by the definition of parallel) separate, they converge in a head-on collision from which there is no logical-deductive retreat... One way of considering the human mind is to say that it works in a way that opens up the possibility both of conflict and conflict resolution... What do we need in order to resolve the conflict between two interacting patterns? A model of the two patterns and their behaviour, an external perspective on their interaction... Independent computers are capable of creating and to some extent resolving conflict when they are arranged so that they interact with each other... A population of computers would be self-organizing in a way that increased both the amount of conflict and the amount of conflict resolution. And to continue to be self-organizing the population would have to generate or capture additional units equipped with different, conflict-promoting programs." G. Pask, 1984: 62 and passim.

⁷⁸ "The notion of systems complexity does not only mean that the system relates an extremely large number of unities", E. Morin, 1984: 429.

⁷⁹ "... as we move towards the human and society level a curious thing happens: the fact that we have, as it were, an inside track, and that we ourselves are the systems which we are studying, enables us to utilize systems we do not really understand", Boulding, 1974: 9.

⁸⁰ "The generalized holographic principle that we are going to formulate here... is perhaps a key cosmological principle. Anyway, it concerns the complexity of living organization, the complexity of brain organization and socio-anthropological complexity. It may be worded like this: **the whole is, in a way, included (engrammed) within the part, which is included within the whole.** The complex organization of the whole requires the inscription (engram) of the whole (hologram) in each of its singular parts; thus, the complexity of the organization of the whole requires the organizational complexity of the parts, and this recursively requires the organizational complexity of the whole. The parts have each one their singularity, but they are not, as a result, mere elements or fragments of the whole; they are, at the same time virtual micro-wholes". E. Morin, 1986: 101-102 (my own translation).

⁸¹ This is in a nutshell the essence of autopoiesis when applied to social understanding. As Zeleny synthesizes: "Autopoiesis is... a paradigm in the process of becoming. Many of its implications are still difficult to grasp, some of its assertions are still tentative and possibly

incorrect. Much theoretical and experimental work remains to be done. But even if ultimately proves incorrect, the alternative paradigms can only strengthen their own acceptability and can only benefit from the challenging encounters with autopoiesis. If proven even partially correct, our view of the world, of living systems and societies will never be the same". Zeleny, 1980: - 39.

Chapter 3

The Concept of Self-Perception Systems

3.0. Introduction.

The purpose of this chapter is to present, as a working hypothesis which will be used to interpret the empirical data of this research, the notion of the **self-perception system**. This notion is used to play a heuristic role in order to illuminate the referred data, it is based on, and built upon, the concepts put forward in the previous chapter.

First (3.1., 'Some concepts related to the idea of self-perception system'), I shall consider a battery of related concepts (Bem's concept of 'self-perception'; P.R. McCarthy and R.R. Schmeck concepts of 'self-concept' and 'self-esteem', T.B. Rogers, N.A. Kuiper, and W.S. Kirker concept of 'self-reference', Hazel Markus concept of 'self-schemata' and M. Gecas's idea of 'self-concept') which deal with different aspects of a person's self-representation. Then, I shall compare my conceptual model of self-perception with other similar concepts, mostly originated in the field of social-psychology.

Section 3.2. ('The notion of a self-perception system') will present the main features of the concept of 'self-perception system', as it is going to be postulated in this research. In section 3.3. ('Self-perception systems as non-trivial machines') I will try to connect explicitly the notion of self-perception system with some cybernetic concepts put forward in the previous chapter.

Section 3.4. ('Human consciousness') will characterize self-perception systems as conscious systems. Section 3.5. ('Social individuals as social systems') will explain and argue how social individuals can be considered as social systems in their own right. Section 3.6. ('Social individuals as autonomous social systems') will characterize the autonomous condition of social individuals as agents. In section 3.7 ('Self-perception systems and norms') I shall discuss the relations between self-perception systems and social norms, developing the idea that the latter are not merely internalized, but interactively produced by the former. Section 3.8. ('Social individuals as producers of novelty and change') will stress, as a consequence of the previous conceptual elaboration, the essential creativity of social individuals, which is at the base of their social potential for change.

Sections 3.9. and 3.10. elaborate, on the basis of the notion of self-perception system previously discussed, some concepts which, in my view, appear as necessary in order to apply that notion to empirical research. Section 3.9. ('Self-perception patterns') defines the idea of the self-perception pattern as a concept produced by abstraction from similar individual self-perception systems. Section 3.10. ('Self-expression as a way of access to self-perception') deals with the problem of how to make self-perception systems empirically accessible to the researcher. Specific techniques of 'self-expression' will be the answer to this problem.

3.1. Some concepts related to the idea of self-perception system.

Notions similar to that of 'self-perception system' abound in psychosociological literature. For instance G.H. Mead's concept of 'the self' which has already been mentioned. Other definitions close to the concept of 'self-perception' are Bem's concept of 'self-perception'¹; P.R. McCarthy and R.R. Schmeck concepts of 'self-concept' and 'self-esteem'; M. Gecas's own notion of 'self-concept'; T.B. Rogers, N.A. Kuiper, and W.S. Kirker concept of 'self-reference'; and Hazel Markus concept of 'self-schemata'.

The similarities between the concept of a self-perception system and these other notions can be summarized by three important points: (a) the

consideration of self-perception (or the other related notions, respectively, self-concept, self-reference, self-schemata) as a personal cognitive structure. (b) the view that this cognitive structure represents a model which guides the person's perception of herself. (c) the contemplation of the self-perception/concept/reference/ schemata as a specific structure involved in the processing, interpretation, evaluation and memory of personal information (information about ego as a person).

G.H. Mead's conception of the 'self' is related to the notion of 'the generalized other'. Mead is mainly interested in the process of generation of the self, and views this process as an outcome of social interaction. Along the course of interaction, the form of the self would be shaped by the social environment of the individual.

"the unity and structure of the complete self reflects the unity and structure of the social process as a whole; and each of the elementary selves of which it is composed reflects the unity and structure of one of the various aspects of that process in which the individual is implicated... the structure of the complete self is thus a reflection of the complete social process... the organized community or social group which gives to the individual his unity of self may be called 'the generalized other'" (G.H. Mead, 1934: 220).

Mead's notion of the self appears to be conceived as a reality, somewhat isomorphic with respect to the individual's social environment (the critical word regarding this point would be the term 'reflection', which can be interpreted in different ways). Although it seems a rather plausible concept, this notion of the self as shaped by its social milieu entails some deep problems. On the one hand, a perfect shaping of the self by its social environment would imply a perfect match between that self and such an environment. But this circumstance would arguably make it impossible for the individual to question and change that environment. On the other hand, an 'imperfect shaping' of the self by the social milieu —and a corresponding 'imperfect match' of the former with the latter—, would certainly make some sort of change possible. But it would also require a careful explanation of the sense of such 'imperfection' and the way it works. Would it not be better to

substitute, in this respect, the notion of 'match' by that of 'fit' as von Glasersfeld has suggested? (See von Glasersfeld's note in Chapter 2). From this point of view, the relationship between the self and the social milieu would be a relationship of 'fit', and not one of 'match', and this milieu would not 'shape', but constrain, the internal, self-organizing evolution of the self.

The concept of self-perception was first used by Daryl J. Bem² as an alternative interpretation of Festinger's theory of cognitive dissonance (Festinger 1964).

"Self-perception, an individual's ability to respond differently to his own behaviour and its controlling variables, is a product of social interaction".
Bem, 1967: 184.

Bem conceives the concept of self-perception in a radically behaviourist, experimentalist frame: in his view, self-perception would refer to the subjects' capabilities for discriminating their emotional and bodily states. Bem stresses the role of 'external clues' in the subjects' interpretation of those states. From the point of view that is being taken in these pages, Bem's notion of self-perception is far too restricted. Each of us, as a person, perceives herself not only through corporal sensations (as having 'butterflies in the stomach' —one of Bem's examples), but in a much more complex manner.

P.R. McCarthy and R.R. Schmeck have recently proposed their notions of 'self-concept' and 'self-esteem' in the following terms:

"the self-concept is the most significant cognitive structure organizing an individual's experience, while self-esteem is the most influential, affective evaluator of this experience. The self-concept organizes all that we think we are, what we think we can do, and how best we think we can do it, while self-esteem is the extent to which we are pleased by that concept, or feel worthy. (Hamachek, 1978; Wylie, 1974)

Together, they comprise the self-theory, or model of experience that helps us explain our past behavior and predict our future behaviour" (McCarthy and Schmeck 1988:131).

I shall anticipate that the postulated idea of 'self-perception system' would include both the self-concept (cognitive structure) and the self-esteem (affective evaluator) components. That is the reason why I use the term 'perception' (in a wide sense) instead of the more restricted term 'concept'. From this point of view, the 'cognitive' (conceptual) network of an individual would be organizationally closed through her attitudes, and these attitudes would be realized through that cognitive network. Both would be aspects of a single organizational closure. This point of view seems plausible when one considers some facts of personal experience: concepts appear to develop links between them by means of attitudes, and those attitudes usually express themselves attached to concepts. For example, a person's concept of a dog generally becomes more or less developed (that person can differentiate a certain number of breeds, knows the habits of these animals, etc.) depending on her attitude towards dogs. If some one loves dogs, most likely her knowledge about them will be rather detailed; on the contrary, if she does not like them her information about dogs is likely to be pretty shallow. In that way any of a person's high level perceptions would include both a cognitive and an attitudinal component which translates her affective/emotional link with that cognitive component. This linkage can be conceived of as produced and reproduced by/within the psycho-social organizational closure of the individual as a person, and that underlying organizational closure would precisely be what gives sense to a self-perception system and defines its characteristics.

T.B. Rogers *et al.* (1977;1979), in their presentation of the notion of 'self-reference', understand the self as:

"a large and complex prototype that imparts a bias in processing personal information... The self is an extremely active and powerful agent in the organization of the person's world... the central aspect of self-reference is that the self acts as a background or setting against which incoming data are interpreted or coded. From this point of view, self-reference is a rich and powerful encoding process". (Rogers 1977: 677).

This outlook is quite close to the postulated idea of 'self-perception system'. But the previous still raises some debatable points. First, although the

self may be conceived of as 'a large complex prototype', it can be questioned if it just 'impart a bias in processing personal information', which is understood as information of a person about herself. It can be argued that the self would 'impart a bias' in processing **any** kind of high level 'information'. (Inter)personal experience seems to indicate that the personality of an individual biases practically all her high level representations. For instance, it would be difficult to deny that the kind of literature that a person prefers is biased by her personality³.

Markus's (1977) notion of 'self-schemata' seems very similar to Rogers' idea of self-reference:

"Self-schemata are cognitive generalizations about the self, derived from past experience, that organize and guide the processing of self-related information contained in an individual's social experience". Markus, 1977: 63.

The interesting point seems to be what can be considered as 'self-related information'. This concept can be interpreted in a restricted sense (directly self-related information) or in a broad sense (directly **and** indirectly self-related information). Markus' point of view appears to favour the first alternative.

Gecas discusses the idea of 'self-concept' from the point of view of social psychology. In his words,

"The self-concept is composed by the various attitudes, beliefs, values and experiences, along with their evaluative and affective components (such as self-evaluation or self-esteem), in terms of which individuals define themselves... the self-concept is both a product of social forces, and to a large extent, an agent of its own creation. The self-concept is 'a source of motivation'. (Gecas, 1985:739-741).

Gecas distinguishes three kinds of self-motives, put forward in the literature of social psychology: (1) Self-enhancement or self-esteem motive; (2) Self-efficacy motive; and (3) self-consistency motive. In my view, an

important question is the relation between these three kinds of self-motives. It can be argued that self-consistency has not only a cognitive character, but it would also have an affective, emotional content. In the model of self-perception systems that I am proposing, the person's organizational closure would intertwine cognitive and emotional contents. Self-esteem would be a general outcome of that intertwining.

The relationship between the idea of self-efficacy and the other two kinds of motives can also be argued. In Gecas view,

"the self-efficacy motive refers to the importance of **experiencing** the self as a causal agent, that is, to the motivation to perceive and experience oneself as being efficacious, competent and consequential" (V. Gecas, 1985:740).

Hence, on the basis of Gecas argument, a further interpretation of the notion of self-efficacy is possible: a person can only act as an agent if she believes in her efficacy as an agent. The use in this context of the notion of autopiesis (see Chap. 2.3 above) or self-production, can help to clarify the idea: an agent can only self-produce her role as such an agent if she believes in the efficacy of her action (Varela and Maturana, 1980).

The differences between the concept of self-perception system which I use and those other notions, chiefly arise from the rather restrictive way in which all of them conceive of the self. To make possible a proper understanding of the social character that, as Mead argues, the self intrinsically has possible, it seems necessary to widen this concept considerably.

In order to make this point clear, I shall introduce a distinction which draws on an earlier one introduced in social analysis by Ibañez (1969:168 *passim*). This author differentiates between the 'subject of the sentence', and the 'subject of the statement': when a person, say Ann, says 'John is wrong', Ann is the subject of the statement, but not the subject of the sentence (the subject of the sentence is John). On the contrary, when Ann says 'I am wrong', Ann is the subject of the sentence as well as the subject of the statement. So human beings, as speakers, are subjects in (at least) two senses: as subjects of

sentences (as an 'I') and as subjects of statements. When I use the idea of self in the first sense, I shall write 'Self' (with a capital letter); and when I use the idea of self in the second sense I shall write 'self'. The Self is an aspect of the self: the former refers to one's condition as a person who thinks of herself as of an individual person (who takes just herself as the object of her thinking). The self is a wider reality: it is one's condition as a person who thinks of any reality (who takes any reality as the object of her thinking, including her Self).

When Ann says 'John is wrong', Ann is expressing her self, but she is not expressing her Self. According to this view, the totality of her representations as a person (that is to say, as an agent) would belong to her self. Whereas the totality of her representations as a person **about herself as a person**, would belong to her Self. Not all of Ann's representations would be personal in the latter sense. For instance, Ann's representations about the policies of the government would not belong to Ann's Self. But they would belong to Ann's personality, to Ann's self (it would be difficult to deny that people's representations about policies, moral principles, etc., belong to a part of their personalities).

What is the point in making that distinction between self and Self? Such a distinction seems somewhat necessary because self and Self arguably define each other; more exactly, in the light of the concept of self-perception system which is being postulated, the Self and the (remaining part of the) self would produce and reproduce each other as elements of the organizationally closed, psycho-social system constituting the individual's personality. In simpler, more intuitive terms: the way in which a person understands other realities (including other people) determines, in a certain manner, the way in which that person understands her Self; and vice versa, the way in which a person understand her Self determines, in some way, her understanding of other realities (including other people). From this point of view, the conceptions of a person about the others and the world at large, belong to her personality (they define her quality as a person) as much as her conceptions about her Self; it can be argued that one aspect can hardly be understood disregarding the other. For example, someone who believes that the world is inhabited by countless spirits will attribute many of her actions to the irresistible influence of those spirits⁴. On the contrary, someone who views

reality in strictly materialist terms will probably detect the influence of material (physiological, social, etc.) causes in her actions.

This conception of the self/Self as a dynamic duality is clearly related to Mead's conception of 'the self' and 'the generalized other' (G. H. Mead, 1934). What Mead calls 'the complete self' (see G. H. Mead, 1934: 220) would be constituted, from the perspective postulated here, by a conflictive process, steered by the referred duality self/Self.

This duality could also help to explain the relationship between Gecas three levels of self-motives. The intertwining between those three levels (self-esteem, self-efficacy, and self-consistency) would not only include a person's images of her Self, but also the images of that person's self about the others. People's self-esteem seems to be an outcome of the relationship between these people's Self-images and their images of the others. For instance an individual, say John would probably consider himself rich or poor depending on how rich/poor he thinks the others are (those other people to whom he compares).

In the following section I shall present my conceptual model of the notion of a self-perception system. This model, as said before, has a heuristic value: it is not the only possible model, but one whose relevance can be tested in the light of its interpretive power regarding the empirical data of my research.

3.2. The notion of a self-perception system.

It can be argued that social individuals have a characteristic outlook with which they regard themselves as well as the social reality with which they interact. However in the social sciences, as Bernstein among others have argued, we do not usually pay much attention to the deep underlying structure of that typical individual outlook.

A key concept to understanding our view of ourselves is the concept of 'self' (see the quotations of Mead, McCarthy and Shmeck, Markus, and Gecas in the previous section). The notion of 'self' which has been already

presented in several versions, has acquired new dimensions among some other recent writers, mainly in the field of cybernetics, as the concept of self-organization (G. Pask and H. von Foerster) and/or auto-organization (E. Morin and J-P. Dupuy) has developed. Using these sources, I am going to argue, as a working hypothesis, that the individual's conceptions of the self and of reality in general (especially those of the immediate social reality in which the individuals act) are **coherent structures**, produced and reproduced by those individuals through their social interactions. "It is impossible to conceive of a self arising outside social experience" (G. H. Mead, 1934: 217). But any action or interaction of the individual must also have a coherence of its own: there is no action without a meaning attached to it (Searle 1983:197-230), but any meaning can be conceived of as entailing an underlying, coherent structure from which that meaning derives its sense⁵.

In the previous chapter I suggested that such a coherent structure could be conceived of as defined by a condition of organizational closure. In this chapter and taking into account the set of concepts presented in Chapter 2, I shall put forward, as a working hypothesis worthy to be considered and judged in the light of its heuristic value, a conception of **social individuals as autonomous, self-coherent systems, which have a characteristic inner logic because they are organizationally closed systems of a psychosocial, conceptual/intentional kind**. This hypothetical conception has, as stated before, a heuristic content. Heuristic hypothesis and models are not intended to be proven, as empirical thesis are. They do not **directly** relate to empirical data. In that sense, and strictly speaking, they are not true or false, but **useful** or **useless**: they are useful when they **further** the development of new ways to access empirical reality, and the production of specific empirical thesis (**which are the only ones testable against empirical data**). Consequently the usefulness of the heuristic model which I am going to develop would have to be judged in view of the specific analyses and thesis that I am going to put forward in the empirical part of this research.

However, although a heuristic thesis cannot be proven (unless it is converted into an empirical thesis, or a set of them), its plausibility can be buttressed. In the following pages I am going to develop my heuristic model (the notion of self-perception systems) with this purpose.

I shall define a self-perception system as:

(a) the organizationally closed domain made up of the cognitive and motivational schemata⁶ through which the individual perceives herself and the world, and acts in that perceived world.

These schemata provide the individuals with the instruments by means of which they can interpret reality (their own reality and that of the world, including the others) in specific situations. However if such schemata were independent entities, —something like the memory cells in a computer— the individual could possibly act in each specific situation, but arguably they would not be able to relate meaningfully their actions in different situations: they would not be able to relate those actions between them, nor to themselves (Piaget, 1971). Besides, if schemata were independent realities they would not interact, and consequently they could hardly be able to produce new schemata through that interaction (and individuals apparently produce new schemata all through their lives). This is why, from this perspective, schemata must constitute and, at the same time, be the products and the producers of an organizationally closed network of relationships between them. This self-productive, self-reproductive, informationally open network, would constitute an organizationally closed system, which would provide a condition of agential closure for the individuals. This condition would allow them, according to the postulated model, to make sense of their actions, coordinating them in a complex relation of intertwined purposes. As it was put forward as a plausible hypothesis in Chapter 2, the condition of agential closure would prevent individuals from getting lost in the middle of their action dynamics; it would provide a frame of connected meanings that would make sense of the individual's actions. Within this theoretical, heuristic framework, it can be argued that we are agents in so far as we can relate any of our actions to a wider purpose, and in that way we can make sense of that action (Searle 1983). But this capability of linking any particular action to other actions and ultimately to our basic aims and motives as actors, would be the proof of the underlying condition of closure, that would enable us to act as viable agents.

(b) From the point of view of the model of self-perception systems that I am presenting, each individual agent would be an individual self-

perception system in the indicated sense. No individual would be able to function properly as an agent possessing two completely separate self-perception systems. A severe lack of integration of the self would imply the disorganization of that self (and what is called psychosis)⁷. Allegedly, an individual can have a dissociation of the personality, although this concept has been questioned by contemporary psychiatry⁸.

The personality of people who are considered to be sane usually has different aspects or levels, but these would not function as separate, closed systems: they would communicate in some way—for instance, through the unconscious—and make up a single agential system. This communication, as suggested, can remain unconscious for the individuals' self, and would include (and solve) tensions and conflicts. For example, suppose John badly needs to behave aggressively, but on the other hand he also needs to be accepted in 'normal' social life. Then, John can adopt soccer hooliganism as a way of reconciling those two aspects of his personality: he behaves aggressively at specific places and times, and lives a normal life outside those circumstances. Of course, the person's agential closure—and the underlying organizational closure of meaning—would always be threaten by incoherences and even breakdowns; this is why the person would be permanently engaged in the task of reconstructing it. This task cannot stop, and would produce as an outcome, the evolution of that agential closure.

In the proposed model, the self-perception system of each individual would be unique at a given point in time (in her biography). Besides, no two self-perception systems, corresponding to two different individuals, would be identical. Self-perception systems are conceived of as a very complex kind of system. They would be produced through a long experience in which the subject has been interacting with an extremely complex environment (of a socio-cultural kind). That is way to find two identical self-perception systems would be even more improbable than finding two identical human bodies.

(c) In the postulated model, an individual's self-perception system would be constituted as a self-coherent and dynamic network made up of **concepts, evaluations, aims, expectations, attitudes, wishes**, etc. It should be stressed that it would be composed of both 'objective' (cognitive, conceptual)

and 'subjective' (attitudes, volitions, etc.) elements. As a matter of fact, both kind of elements seem very difficult to separate in real life. For instance, if a person loves opera, she should **know**, on the one hand, what such a thing is (she should possess some personal version of the concept 'opera'). On the other hand, she attaches a specific attitude to that concept (Vygotsky)⁹. The use of the word 'perception' to formulate the idea of self-perception systems, seeks to capture the double dimension, objective and subjective, of this notion. Other alternative terms such as 'cognition' (the use of the expression 'self-cognition systems' could be an alternative) tend to evoke only the 'objective', conceptual aspect of the phenomenon in question.

(d) What I call a self-perception system would not only refer to the individuals' perceptions of themselves; it would also include those individuals' perceptions of the world around them. All that a person knows, wishes, feels, etc. would make up the inner world of this person and in that sense would constitute this person's **self**. From this point of view, a person's knowledge and attitudes towards other subjects (other individuals or social groups) would belong to this person's **self**, just as much as this person's knowledge and attitudes towards herself. A self-perception system would be a structure shaping the individual's personal images of '**herself-in-the-world**'. The prefix 'self-' indicates, on the one hand, the autonomous, self-coherent quality of those systems. On the other hand, it suggests a basic hypothesis, namely that a person's perception of the world, or any part of it, would be something which cannot be properly conceived of independently from that person's other perceptions (including her own perceptions as a **Self**). For a person to perceive the external world would be to perceive **her** image of it, and hence indirectly to perceive **herself** through that image¹⁰.

(e) Hence, according to the model, a self-perception system would comprise all the knowledge/attitudes of an individual about reality. Any knowledge that a person has, would be a part of her identity as a **self**. This means that a person's self-perception system would include all aspects of social and natural reality as they are perceived by this person. From this point of view, a self-perception system would be, by necessity, a **social** self-perception system. It would not be just an individual self-image of the person, but a social self-image of that person in her relationships with all the other

individuals of whom she is aware. The person's self-perception would **always** be directly or indirectly social. When a person perceives herself, she would do so **socially** (E.Morin, 1986: 194). The understanding of oneself would be an **essential social** phenomenon, because human beings would only be able to understand themselves (their selves) as **social** actors in a social milieu. The same would occur regarding the person's understanding of the world in general. The person's understanding of the 'nonsocial' world **would also be social** in its original nature. For example, when in our culture a person believes that the Earth is round and not flat, this is the result of accepting a set of opinions received through social interaction. A person accepts those opinions in a given social frame —the primary school, the family, etc.— and in interaction with specific social agents —teachers, parents, mates, etc. One does not understand things (even things that are assumed to belong to the 'natural world') in a social vacuum (Mead, 1934; Garfinkel 1967; Berger and Luckmann, 1970).

(f) Therefore, it can be argued from the stand point that the model posits, that an individual's self-perception system is neither a uniquely 'psychological', nor a purely 'sociological' reality, in the traditional sense of both terms. It would not be merely 'psychological' because such a system is intrinsically a social construct (the individual's purely psychological characteristics, such as her temperament, would only provide a dispositional basis for the **social** construction of her personality)¹¹. And it is not purely 'sociological' because a self-perception system would include aspects which are not explicitly social —the individual's views on 'nonsocial' realities. For instance, not only beliefs about the 'natural world', but also purely individual representations, 'private meanings' that are not shared with other subjects, and which, in a way, express the 'psychological' specificity of the individual. Gadamer holds a similar view on this combination of the social and the psychological aspects of the individual's personality, stressing the fact that self-awareness is part and product of the individual's historical life:

"Long before we understand ourselves through the process of self-examination, we understand ourselves in a self-evident way in the family, society and state in which we live...The self-awareness of the individual is

only a flickering in their closed circuits of historical life (H.G. Gadamer, 1975: 245).

Notice however that, from the perspective that is being postulated, self-awareness would only be a part of a person's self. As already indicated, this self, as a whole, would be constituted as a self-perception system that, would include all self-representations about reality.

According to the interpretation just outlined, it would be more accurate, strictly speaking, to talk about **psycho-social** self-perception systems. Nevertheless, once the fact that a self-perception system is an intrinsically psycho-social reality, has been considered as a plausible working hypothesis—and this would mean that there are no self-perception systems which are 'nonsocial', because individuals would only be able to perceive themselves and the world from their condition of being social actors—, it is no longer necessary to insist on that qualification. Consequently, instead of talking about 'psycho-social self-perception systems' I shall henceforth, for the sake of brevity, speak simply of 'self-perception systems'.

(g) As argued before, the images of 'one-self-in-the-(social) world', which make up a self-perception system, would be of a conceptual, but also of a volitional and emotional nature. A self-perception system would not only be made up of the concepts or ideas about oneself and the external world, but it would be constituted by a complex intertwining of attitudes and wishes, which would form the motivational basis for the individual's schemata of volitions. This volitional level, rooted in a certain self-perception system, would produce the decisions which determines the individuals' action, and specifically, their social action. The concepts that an individual possesses would always be interpreted by this individual through her attitude to it. One would not be able to have/use a concept, without generating an attitude attached to it. Arguably, if one had a concept to which one could not apply an attitude, one could not relate to it in any effective way: it would be meaningless for oneself as an agent. (Of course, one can have concepts which are completely irrelevant for oneself; but 'to be completely irrelevant' is already a personal attitude that one attaches to those concepts).

(h) A self-perception system, as postulated, cannot be properly conceived of as being merely the result of the individual's emotional internalization of a set of **social norms**. This concept would split what is an unitary, organizationally closed system into two components: one coming from the outside, the 'social norms', and the other coming from the inside, the emotional, purely psychological, attachment to those norms. Within the trend of sociological thinking that goes from Durkheim's *The Rules of Sociological Method* to modern structural-functionalism (Parsons 1937, 1951), the idea of a 'social norm' implies something external, 'objective', which is imposed on the individual from the outside (A. Giddens, 1981: 88-97). On the contrary, in the light of the postulated model, a self-perception system would be a reality produced from the individual's interior, 'from the inside to the outside', not only in its psychological (attitudinal, affective, emotional) components, but also in its conceptual elements. It would be an **autonomous** system, in the original meaning of the word 'autonomous': something which gives itself its own norm. According to the heuristic model that is being proposed, each self-perception system would generate its own set of norms, although those norms would be (must be) structurally coupled with (the set of norms of) the (also autonomous) systems with which it interacts¹².

3.3. Self-perception systems as non-trivial machines.

In the light of the model that has been proposed, it can be argued that individuals are personally and socially defined by their respective self-perception system. Another question is the problem of how those individuals acquire their specific self-perception systems (their peculiar psycho-social organizational closure). I am not going to deal with this genetic problem through a specific analysis. It is a problem which deserves a careful investigation, and this would go beyond the scope of this thesis. As I suggested in the previous chapter, the analysis of the functional structure of a system may be attempted independently from the consideration of the history through which that system became constituted as such. Thereby I shall work with the hypothesis that the history of interactions of a self-perception system would **constrain** —through a process of structural coupling, a concept already presented in Chapter 2—its development; but it would not determine that

development —if only because the history of interactions is not predetermined but a contingent outcome of the very history.

A self-perception system, as already defined, would not be a "trivial machine" in the sense given to this expression by H. von Foerster (1981b:201-204; 1991:67-73):

"... a trivial machine is characterized by a one-to-one relationship between its 'input' (stimulus, cause) and its 'output' (response, effect). This invariable relationship is 'the machine'. Since this relationship is determined once and for all, this is a deterministic system; and since one output once observed for a given input will be the same for the same input given later, this is also a predictable system" (H. von Foerster 1981b:201).

It would be difficult to deny that human individuals function as non-trivial machines almost under any circumstances:

"... non-trivial machines, however, are quite different creatures. Their input-output relationship is not invariant, but is determined by the machines previous output. In other words, its previous steps determine its present reactions. While these machines are again deterministic systems, for all practical reasons they are unpredictable, an output once observed for a given input will most likely be not the same for the same input given later" (H. von Foerster 1981b:201).

I shall put forward, as a part of my working hypothesis, the idea that human beings are not **deterministic trivial machines**. Apparently, the input/output which they accept as meaningful is determined as such by their own internal organization (and this has been constituted, at least in part, by the previous history of interactions). In general, living beings might be considered non-trivial machines of a complex kind. They cannot be understood as environmentally determined systems. Quite the opposite:

"Instead of searching for mechanisms in the environment that turn organisms into trivial machines, we have to find the mechanisms within the

organisms that enable them to turn their environment into a trivial machine. In this formulation of the problem it seems to be clear that in order to manipulate its environment an organism has to construct —somehow— an internal representation of whatever environmental regularities it can get hold of" (H. von Foerster 1981c: 171).

From this perspective, characteristic of the new cybernetics, as well as of the last developments of cognitive science (Winograd and Flores, 1987), this construction of an internal, idiosyncratic representation of environmental regularities, would constitute the phenomenon of cognition:

"At the cognitive level, the extension of the evolutionist paradigm demands the rejection of the classic cybernetic schema 'input-output'. A diversity generator permanently and blindly produces variable representation outlines or 'pre-representations', which the organism accepts or rejects depending on their fit to the external world" (J-P. Changeux, 1992: 720-721).

The necessity of constructing elaborate representations of their environment, in order to control it, would be even clearer for human beings than it is in the case of organisms in general. From the point of view that is being argued, social individuals, as autonomous systems, would have to navigate their way through the social environment in which they must produce their own lives. That process would require, in Piaget's terms, both 'assimilation'¹³ and 'accommodation' on the part of the individual. Individuals would assimilate their social experience to their autonomous self-perception system; and they would accommodate (fit) that system to the requirements of the social environment in the course of that experience. The outcome of the interplay between accommodation and assimilation would be **adaptation** (Piaget, 1971). In the light of both, evolutionist theory (Barnett, 1962; Jacob, 1970, 1981; Ruse, 1973), and second order cybernetics¹⁴, it can be argued that this adaptation must not be understood as a passive compliance with the characteristics of that environment. Adaptation would be a creative and dynamic process; it would be adaptation (search for fit, not match —von Glasersfeld 1991) to, but also adaptation of the environment; one way to adapt

to the environment is to change that environment— if only, by the simple procedure of migrating to a new environment.

Therefore, from the point of view that has been argued, it would not be possible to establish, strictly speaking, a deterministic relationship between causes in the social environment and behaviour of the social individuals —it would only be possible to detect constraints which act in a non-deterministic way. On the basis of this insight, I have focused this research, not with the aim of trying to find the social causes leading to the configuration of different types of self-perception systems, but rather to the exploration of the diverse perspectives which such systems furnish to the present and future actions of the individuals whom I study.

As has already been indicated, the conceptual framework of this research is chiefly derived from the viewpoint put forward by systems theory/cybernetics and specifically by nonclassical systems theory or nonclassical cybernetics, as it is defined by von Foerster, Gordon Pask and Maturana among others. This viewpoint, outlined in the previous chapter, has strong, although often not explicit, affinities with some other theoretic perspectives, which have a more recognizable profile in social theory. I am speaking mainly of hermeneutics (Gadamer, 1975, 1976; Ricoeur, 1981), symbolic interactionism (G.H. Mead 1934; Berger and Luckmann, 1966 etc.), cognitive science (Lakoff, 1980; Minsky 1986, etc.) and constructivism (Steier 1991; von Glasersfeld, 1991; Gergen, 1991, etc.). Arguably, some of the insights of these approaches may be given a crisper formulation by means of nonclassical cybernetic concepts (Heylighen, 1987; Zeleny, 1980).

Of course, notions such as organizational closure, informationally open systems, etc., are very abstract, and should be specified and implemented by means of concepts more concretely applicable to social realities. In this sense, the empirical part of this research will be an attempt to apply some of those concepts to a specific social reality. In that part of the thesis, I will try to develop a theoretical outlook that seeks to implement cybernetic concepts—and more specifically, non classical cybernetic concepts—in the study of social realities. But in order to bridge the conceptual gap that exists between those abstract concepts and the more concrete notions that should be applied to

specific social analyses, I shall elaborate further the idea of self-perception systems, so far presented in general terms, in the following sections of this chapter. This further elaboration should be instrumental in achieving the objective of this dissertation, which is twofold: first, to develop the concept of self-perception systems, as outlined in the previous paragraphs; and second to prove its relevance as an instrument of sociological analysis, in a study of several groups of students.

3.4. Human consciousness.

According to the heuristic hypothesis that guides this research, human consciousness would be the specific domain of the organizational closure that constitutes social individuals. That closure would be realized through the domain of the unconscious as well. But this domain is defined —at least in Freud's view¹⁵ — in relation to consciousness.

Human consciousness has the specific quality of being the consciousness of an 'I'¹⁶. In this respect it would differ from other forms of consciousness, probably present in some nonhuman animals (Premack, 1983; Griffin, 1984). The organizational closure defining the human being as a social individual, (as a person) would be realized in the domain of human consciousness, and this would radically differentiate that closure from that of any other autonomous system. Human consciousness is conceptual and intentional; it generates specific kinds of 'images', concepts, and applies its intentions to them. In this sense, it would be **conceptually intentional** (Searle, 1983; Riviere, 1991; Frith, 1989; Mehler & Dupoux, 1990).

Hence, the peculiar kind of autonomy that is characteristic of human beings, would be the autonomy of their consciousness, of its conceptual/intentional imaginary domain (Castoriadis, 1987). This autonomy may be conceived of as the base of human social behaviour, and as the instrument through which human individuals can participate, as social agents, in human society. The autonomy of consciousness —of that conceptual/intentional imaginary domain— would find a paradigmatic expression in the phenomenon of conversation. A social individual, in conversation with other individuals or

with herself, would produce and incidentally reproduce the contents, the structure, and the organizational closure of her peculiar imaginary domain (G. Pask, 1975; 1978; 1981...).

3.5. Social Individuals as Social Systems.

Within the framework of the heuristic model postulated, it can be argued that social individuals do not simply **belong** to social systems; they would be social systems in their own right, because each of them would possess a personal, idiosyncratic representation of the social system in which they live and interact¹⁷. Humphrey (1986) has suggested that we, human beings, are 'natural psychologists', that our brain seems tailor-made to understand the mental processes of people. By the same token, it can be argued that we are 'natural sociologists' as well: our brain seems purpose-built to understanding the actions of the others, and the interactions with and between those others. In order to reach this understanding, we would need to build the internal representation of a society of agents. We would need to do so just to become a competent agent.

"All human beings continuously monitor the circumstances of their activities as a feature of doing what they do" (Giddens, 1991: 35).

This process starts very early in life. Consider the role of fairy tales in this respect (B. Bettelheim, 1975 and 1979). These stories enshrine a minimal society of archetypal agents (the lost children, the witch, the friendly fairy, etc.) whose interactions would be easily understandable by children who are developing their own competence as agents through that understanding. It can be argued that the maturation of an individual as a social agent would consist in the development of that 'internal society' through which that agent would represent social life.

We would be **autonomous social systems** as a result of being by necessity action systems. Action presupposes purpose, meaning. Hence, from the point of view of the postulated model, organizational closure—autonomy—, because only that closure would 'make sense', and action has

to have some sense to be effective. A very simple example of an action system, presupposing an underlying organizational closure, is TOTE, a cybernetic model proposed by Miller, Galanter and Pribram (1960: 37 *passim*) to explain purposeful action. TOTE (Test-Operate-Test-Exit) indicates the presence of an action/evaluation loop, which is cyclically applied until the moment when the action system evaluates that its intended goal has been accomplished. TOTE is not an organizationally closed action system, because there is an access to and an exit from the system. But suppose that there is a system composed of TOTE units any of which act on the products of other units and produces the input to other units. That whole action system would be organizationally closed.

Arguably, human beings, as action systems, would be a closed network of specific actions. There would be no exit from our condition as agents. When a person achieves a goal, she looks for other goals, perhaps facilitated by the first one; and when she accomplishes those goals, she looks again for further goals among which there could be the one in the first place. For instance, suppose that Mary moonlights to get extra money, and she does so in order to buy some holidays. She goes on holidays, expends more money than she had expected, and then she has to moonlight again.

Now, within the framework of the proposed model, human beings are not only action systems but also interaction systems. But to be capable of interaction individuals would need to represent themselves as subjects, and they would need to represent other subjects as well. So, they would have to represent a tailor-made 'internal society', adequate to their interaction requirements: this is the reason why they would be social systems in their own right. Human beings would not be able to interact in society if they did not have an internal representation of that society. This internal society would be produced by each individual, it would be an idiosyncratic construct, because it would have to guide each individual's actions as a personal agent, not somebody else's actions. It would be a personal construct (Kelly, 1955; 1967), although one which must be somehow structurally coupled to the 'external society' with which the individual interacts.

From an analogous point of view, G.H. Mead (1934) considers an individual (the self) as being both an object and a subject. An object because

human beings can observe themselves (self-reflexion) and a subject because they recognize themselves as agents of social action. Besides, a person can recognize the other as a 'self' and therefore can put her or himself in the position of the other. This capability of seeing (constructing) the other's perspective is what allows the self to predict and anticipate the other's response and hence to act accordingly.

Certainly, although social individuals are autonomous social systems in their own right, they cannot be considered in isolation because they are, at the same time and by necessity, a part of the more complex social system constituted by the society with which they interact. The social systems that individuals are cannot be thought of outside society; but at the same time those social systems —the individuals— are the basic constituents of society: as a matter of fact, society is the emergent effect of those individuals' interaction. As Morin argues:

"The social phenomenon emerges when the interactions between individuals of the second type (multicellular beings) produce a whole which is not reducible to the individuals and act back upon them, that is to say, when a system is constituted... Society is not superimposed to the interactions between individuals-subjects because it is made up by those interactions. However it is something different from the sum of those interactions, because those interactions produce a social system, that is to say, an organizing whole which acts back upon its constituents"¹⁸.

The individuals, as has already been suggested, are psycho-socially autonomous systems in the sense that they are defined by the organizational closure of their conceptions and intentions. They are self-organizing entities stabilized by more or less elaborate forms of what I shall call 'self-coherence'. Accordingly the social representations that individuals produce and reproduce (the 'internal societies' that constitute their imaginary environment as agents, and which are the basic constituents of society) have those characteristics of self-organization and self-coherence as well. For instance, suppose a person has strong views on politics; she/he will interpret any political question in such a way that those views (on the behaviour of her/his archetypal political actors) are validated by that interpretation. Sentences as: "of course, conservatives

would do that, wouldn't they?" would be quite predictable in those circumstances.

If society shows self-organizing and coherence maintaining capabilities, it is because their basic constituents (human beings) intrinsically possess those features, which are also characteristics of the 'internal societies' that those individuals constantly produce and reproduce in the course of their social lives.

That psycho-social self-coherence, stemming from the **organizational closure of meaning** (conceptual and intentional meaning), is the basic feature of what I call a self-perception system; as previously indicated, this type of system includes the individuals' self-perception of the world (both social and 'nonsocial') and their self-perception of themselves. From this point of view, socialization may be defined as the social individual's construction of a self-perception system adequate to the social world in which that individual exists and acts. Therefore, socialization must not be viewed as a process of passive seeping in of 'social norms', but as an active process of self-construction (of a person as a self-perception system) through action, process which certainly occurs in a specific space of interactions (a specific social environment). Mead's view on socialization is somewhat similar to the outlook adopted here. Socialization is an interactive, endless process through which the self responds to society by 'reflective intelligence'. By using reflective thinking human beings actively create, reshape, and choose their responses to their environment, and at the same time this specific process of knowledge construction (re)produces society through interaction (G.H. Mead, *op. cit.*:143). Maturana also insists in this double process that creates both the self and the society. His conception of human beings as autopoietic systems implies that those systems, just to keep alive (to maintain their identity as self-organizing, organizationally closed systems) must create a system of interactions that becomes the adequate environment in which they realize their autopoiesis. In other words human beings (re)produce society and at the same time they (re)produce themselves as social individuals (H. Maturana, 1980: 11-32).

What would appear to some social scientists, called 'naturalists' by Giddens, as the 'objective' social system is the outcome of the individuals' interaction, as dynamic social systems. Just as a cell—in a multicellular living being—is not only a part of an organism, but somewhat an organism on its own (an organized, self-maintaining totality), social individuals are not only a part of a social system, but also social systems in themselves. Those systems relate through action. Now, the condition that makes such relation possible is reflectivity, that is to say the ability of at least one of those systems to mirror the other systems with which it interacts (to have a representation of them). When several individuals interact in a situation, each of them must possess an image of the conceptions and intentions of the other individuals in that situation, hence any of the individuals has to elaborate and postulate a set of representations of her/himself and the others (representation of the 'self' and of the 'generalized other' in Mead's terms). On the basis of that set of representations each individual must reckon the possible actions that can be acceptable to the individuals involved (Berger and Luckmann). Therefore in the course of interaction, social individuals spontaneously construct dynamic social systems which grow and become more and more complex as interaction progresses. Each of those individually represented social systems are permanently kept functional, 'in working order', by a sort of internal coherence: were this not the case, individuals would lose their competence as social subjects. As social individuals constantly produce and reproduce those coherent sets of social representations, they are, by necessity, not only systems of social behaviour but also, in a way, systems of 'social theory'. This view of individuals as producers of both social behaviour and 'social theory' (more exactly, as producers of social behaviour through their production of spontaneous social theory) is close to the view put forward by Mead, Garfinkel and others, who consider that sociologists and the people whom they are observing follow the same basic epistemic procedure: 'reflective/reflexive knowledge'. Reflexive knowledge is the specific form of knowledge that produces society as well as sociology¹⁹.

Social 'objectivity' emerges when several of those individual social systems meet and interact, each one with the informational requirements demanded by her peculiar self-perception system. In the course of interaction they mutually interpret those requirements, contrast their perspectives,

agree/disagree, etc. Through that process they produce new information (they redefine their own individual self-perception system). It is a process that can be described—in terms of Piaget's theory, to which I have referred already—as a dynamics of 'assimilation' and 'equilibration'²⁰. Consensus, a fundamental feature of social relations, is produced and reproduced in that conjuncture of social interaction, and it is necessarily related to the creation of new information. Consensus is not primarily a reduction of the independent views of several individuals to an a priori 'social norm', but the 'invention', through a conflictive process, of an effectual convergence of those independent views (and it is the stabilization and social spread of that convergence which a posteriori appears as a 'norm'). According to the view proposed by Symbolic Interactionism²¹ this convergence, that eventually generates consensus, is considered as the effect that the multiple responses (self and other-responses) produced in the course of interaction have in the long run. Over time this responses become anonymous, abstracted from their specific authors, and part and parcel of a 'generalized community of attitudes'.

The peculiar complexity of any human society stems from the fact of being a **system of systems each of which mirrors the whole system**. This sort of complexity allows human societies enormous possibilities for change: any of the individual systems making up the social totality is—at least potentially—a source of change as well as a source of stability.

3.6. Social Individuals as Autonomous Social Systems.

According to the viewpoint presented in the previous section, individuals can be considered as social systems, in the sense of social self-perception systems, because they need to be (inter)action systems. The individual's action—even when it is a solitary action—always presupposes a background of social interactions (interactions with other individuals and/or with collective agents). Consequently, if that action were not organized by a self-perception system possessing a social dimension, it would be socially ineffectual (there could not be real social interaction through that system, and hence it would fail as an action system). This is the case, for instance, with autistic individuals. One fundamental trait of autism (Frith, 1989) is, the

incapacity to develop a self-perception (system) of an intrinsically social nature, that is to say, a self-perception through which the person can perceive herself **always in (at least) potential interaction with the other**).

Now, the hypothetical assumption that individuals are social (self-perception) systems **because they need to behave as action systems**, would explain some of the more characteristic features of those systems. Summing up the previous analysis, and drawing on the concepts presented in Chapter 2, they would not be passive, externally determined, 'instructively defined systems' (in Varela's sense). They would be organizationally closed and informationally open, self-coherent, self-organizing systems (G. Pask, 1975, 1981). In a word, they are **autonomous systems**. Such systems would have an **identity**. Certainly, this identity would be understood in a dynamic sense. Individual social systems, people, would maintain their identity through a permanent process of change²². This process, capable of maintaining the identity of individuals through change would be, at its highest, specific human level, purposeful action²³. In reality, according to this standpoint, action would be an essential mechanism in stabilizing that identity through change. Human beings act for many particular, individual, reasons, but they also act for a more basic and general reason: **in order to continue being themselves** (although in that process they have to change their own selves to some extent). Identity would not mean, in this context —nor in any biological one—, unchangeability. The human brain, for instance, is biochemically modified by each of its operations. But, at the same time it keeps an organization which would allow the maintenance of the personal identity of the individual possessing that brain. Only when it suffers severe damage which destroys its organization, does this individual lose that personal identity. In an analogous way, the changes in an individual's self-perception system, could arguably be considered as preserving that individual's basic personal identity. Certainly the self-perception system of an individual, can undergo dramatic changes. Then we speak of a personal crisis²⁴. The point is that such crises would substantially transform the individual's personality (and, certainly her self-perception system which constitute an essential part of that personality)²⁵, but without loss of the personal identity of that individual. As I shall indicate further, adolescence is a period in which such crises are likely to occur, as a

result of the fact that is in this period when the individuals construct their adult outlook, their adult personality.

From the perspective of the postulated model, it can be argued that an action system is a purposeful system. Now, the notion of purpose can arguably be understood in two ways, when it refers to action. On the one hand, 'purpose' would mean the concrete, conscious aim of each particular action. Human beings actors are aware of that purpose²⁶. On the other hand, 'purpose' would refer to aims, implicit in action, of which the actors are not generally aware. In this latter sense the more general purpose of action, would consist in productively reproducing their autonomy, the organizational closure which allows them to maintain their identity. This type has been recognized long ago as essential to the maintenance of a system's stability. Functionalist analysis, for example, views this kind of purpose as explaining a substantial part —if not most— of social activity (Merton, 1957: Chapter 3). This "unconscious" and general type of purpose would maintain the intrinsic organization of the system which it defines, its structure and basic properties. A recent and polemic version of this sort of purpose has been sustained by Lovelock in his Gaia Theory; he argues that the Earth as a living organism, has as a main purpose its own preservation (J. Gribbin, 1986). In a similar way, the preservation of each human agent as a psychosocial action system would also be the general purpose underlying each of this agent's conscious actions.

These two hypothetical types of purpose can be illustrated by means of an example. A person, say Mary Smith, may apply for a job in order to forward her professional career and improve her standards of living (she is aware of that purpose, she knows that the supposed improvement is what moved her to send in the application). But Mary would also apply for that job in order to enhance her general self-esteem, her self-image (which may be eroded, say by a recent divorce). Keeping this self-image high would be essential for maintaining her identity, her personal organizational closure, and hence her viability as a social agent (but Mary would not be aware of the majority of these purposes involved in her application for a new job, as in general, agents would not be aware of the need for maintaining and reproducing their own personal organization).

The meaning of 'purpose' when it is understood in that general sense, would point to the very organization of the individual as an acting person. In other words, it would point to the agential closure of that individual. In the light of the heuristic model postulated, an organizationally closed system would productively reproduce its own organization. If it would not reproduce that organization in a closed way, the system would disintegrate. From this perspective, a person would be an organizationally closed action system, which would need to produce and reproduce that specific kind of closure, by acting and interacting with other analogous systems (persons). This would be the meaning of autonomy when this term refers to social human individuals.

Autonomy is a phenomenon which can be detected—in Chomsky's terms (1957)—at the level of 'performance' (external activity). For instance, in their interactions, agents can become aware of the fact that the other agents interpret the situation according to their own personal meanings, which may differ from theirs. In this context, agents become aware of the fact that the other is an autonomous reality. By contrast, **organizational closure** arguably would be detected at the level of—again in Chomsky's terms—'competence' (internal activity): agents would not directly 'see' the others agential closure when interacting with them.

3.7. Self-Perception systems and norms.

At the end of section 3.2, I argued that, within the conceptual model that I am presenting, a self-perception system, should not be conceived of as being merely the result of the individual's emotional internalization of a set of social norms. In fact, any such concept would contradict the hypothetically assumed autonomy of that system.

Drawing on the conceptual frame put forward by the theorists of autopoiesis (Varela, 1980, 1981, 1984; Maturana, 1980, 1984; Zeleny, 1980, 1981), it can be argued that, in a social context, any alleged 'external objective norm' would be just an epiphenomenal effect of the structural coupling (see the concept in Chapter 2.: 85) between the interacting social agents present in that social context. Such an effect would be visualized as 'objective' by an external

observer who would postulate the existence of the alleged objective norm, in order to explain the structural coupling between the individuals whose interaction she observes (S. Braten, 1984; von Foerster, 1981). This notion of structural coupling may be explained further by means of one example. When I use my computer, my mind actualizes a chain of meanings which originate a series of physical actions on my part —my typing— into the computer. Then the computer 'answers' to my typing with some physical changes (with some physical 'actions'). I tend to interpret the computer's 'answers' as a result of its 'understanding' of my own meanings, which are in the origin of my physical actions (my typing). Nevertheless, there is no such understanding on the part of the computer. In fact, the computer does not handle any meaning: it is a mindless machine. The process is one of structural coupling (through my physical actions) between my mind and a mechanical device.

When one interacts with another person, one is convinced that such a person has a mind, and understands meanings just as one does oneself, and this makes a great difference with respect to the case of the computer. But the meanings of that person and one's own meanings do not relate directly, but only through the structural coupling enabled by our interaction (mainly linguistic performances). Searle has shown that two conscious agents can effectively interact through structural coupling, without having any meaning in common²⁷.

According to that interpretation what appears as an 'external', 'objective', set of norms, can only be 'internalized' through its assimilation by/in a self-perception system which would be a fundamentally autonomous reality (in Husserl's terms, the social norms need to be 'worked' by the subject 'consciousness'). From this point of view, it seems plausible to postulate that an allegedly objective social norm can only be effectively used if it is 'metabolized' by the individual. The 'metabolic pathway' would depend on the characteristics of the self-perception system by/in which it takes place.

Hence, the same 'objective' social norm can be explained in different ways and can play diverse functions in different self-perception systems. For instance, the reasons why a person pays for underground tickets (moral standards, social responsibility, fear of scandal, to avoid the fine, etc.) or,

alternatively, tries to shirk that payment (social protest, saving money, boasting in front of the lads, etc.), can be very varied. Each particular type of self-perception system, and in the last analysis each person, can and must 'make sense' of specific actions in a personal way. This would be due to the fact that, along the conceptual lines already defined, a self-perception system would possess a condition of organizational closure which would support the production and reproduction of the individuals' social meanings. Those meanings would only have sense **within** that closure.

In the light of what has been said, it can be considered as a plausible hypothesis that each self-perception system (each personal outlook) has been generated in a process of structural coupling with other self-perception systems (the individuals whom the first self-perception system has interacted with along her biography). In Maturana's words:

"... as a result of the structural coupling that takes place along such a history, **history becomes embodied** both in the structure of the living system and the structures of the medium even though both systems necessarily, as structure determined systems, always operate in the present through locally determined processes" H. Maturana, 1978:39.

However, although each self-perception system is generated along these processes of structural coupling, it can be argued that the study of self-perception systems can be undertaken, for some purposes, independently from the consideration of the specific histories of social influences which undoubtedly play a role in the configuration of those systems. As many authors belonging to the structuralist tradition have argued since Saussure²⁸, a system, once it is constituted as a coherent totality, can become an autonomous reality with respect to the process that led to its generation. The system would embody its history, but it would function through its present organization which, although generated through that history of structural coupling with its environment, would have a synchronic coherence of its own.

In the case of self-perception systems, to study that organization on its own may be heuristically fruitful; in order to determine the internal coherence

of such an organization, the examination of the historical/biographical processes which led to its constitution would not be necessary. Meaning in organizationally closed systems would always function in real time, no matter how the structural basis of that meaning was initially introduced within the system. To give an example: Apparently, the British norm prescribing left-hand drive, originated in the horsemen's custom of slightly turning aside to the left when they crossed each other on the roads, so that they could politely shake their right hands. Nowadays few people remember that original meaning of the norm, and nobody tries to shake hands with the car drivers coming in the opposite direction. However, the old norm has acquired a new functional meaning in our motorized society: to make dense, high speed traffic, safe.

3.8. Social individuals as producers of social novelty and change.

According to the conceptual framework which is being postulated, social individuals would be autonomous systems exhibiting those self-organizing (novelty-producing and yet self-coherency-preserving) characteristics that are essential features of organizationally closed systems (see these concepts in Chapter 2). The individuals' self-perception of the world and of themselves, would inevitably change through their experience of actions and interactions; but the organization of that self-perception would basically maintain its own identity and coherence throughout that process. It can be argued that individuals keep on being themselves through change, although, as stated in section 3.6, there are critical moments in which fundamental reorganizations of their self-perception systems would occur. Those are moments in which an identity crisis would take place; in those moments the very survival of the individual would be at stake. However, under normal circumstances, the process of change would be controlled by the organization of the system, although at the same time that change would modify this organization. Thus, change would be assimilated by the system's organizational gestalt, and that gestalt in turn would evolve towards new forms of equilibrium, as a result of change (Piaget 1975).

That process creates information, in a definite sense: 'external information' would provoke changes in the 'internal information' of the system.

That is, in the characteristics of its organizational closure. The individual would be informationally open just in that sense: 'external information', which initially would not be assimilable by the individual (would in fact be 'noise' for that individual), would become assimilable when it internally 'informs' the individual (changes the form of organizational closure of such an individual). On the basis of von Foerster's principle of 'order-from-noise' (1980), it can be argued that individuals' self-perception systems would develop their own 'internal order' (their organizational closure) by means of external information which is initially noise for those systems.

From this point of view, the informational openness of human self-perception systems would be basic to the variability of human behaviour and of human societies. If human beings were input/output systems, externally controllable entities, they would be 'trivial machines' (von Foerster, 1981c) —their behaviour would be utterly predictable. But in all probability they are 'machines' which develop their own internal 'mechanisms'. According to this view, they would become sensitive to inputs which were initially irrelevant, and they would be able to disregard an input which was initially acceptable. Following these ideas, a hypothesis worth considering would be to postulate that, it is in this dynamics of informational openness, that to a substantial degree, the origin of the cultural diversity among human beings can be found, the source of new meanings and new forms of action, and hence the basis of social change²⁹.

The consideration of social individuals as autonomous systems, would be the exact opposite of the idea of the individual as an 'input-output' machine, which is the fundamental paradigm of the classic 'episteme' at the base of some theoretical approaches such as behaviourism. As some authors³⁰ have pointed out, this approach was prevalent about the middle of this century, and has had a strong influence —frequently in an unconscious form— on sociological thinking (structuralism, functionalism or structural-functionalism³¹). From the alternative perspective which is being postulated here, it can be argued that individuals as living beings are not simple 'input-output devices', black boxes of which, once we know their social background, gender, age... we can predict what we are going to find as their output (H. von Foerster 1981c).

3.9. *Self-Perception patterns.*

These two last sections will deal with some concepts which play an instrumental role in building a bridge between the heuristic outlook just presented, and the empirical part of this research.

Although it is possible to detect similarities between different individual self-perception systems, it can be said that, due to the different biographical contingencies defining each individual, each self-perception system is unique, like our fingerprints. There are not two people who are biologically identical (Gouyon *et al.*, 1993: 256) nor, arguably, are there two individuals who have precisely the same socio/historic experience. But even if two people shared the same 'external' experience (according to the view of an external observer), each of them would have generated a different view of that experience:

"each person says what he says or hear what he hears depending on his own structural determination" (H. Maturana and F. Varela, 1984:130).

Strictly speaking, it can be argued that if two individuals had the **same** self-perception system they would be indistinguishable as two distinct persons. They would be real doppelgängers.

Nevertheless, it is possible to detect similarities between individual self-perception systems. Those similarities would allow the researcher to group analogous self-perception systems into different **patterns of self-perception**. Therefore, in this sense, **a pattern of self-perception can be conceived of as an abstract form of self-perception system, which is typical of a collection of individual, concrete, self-perception systems**. Those patterns would characterize the analogous way in which a specific set of individuals, belonging to a given social group, view themselves and the reality around them. This analogous form of perception usually appears **in contrast** to the peculiar self-perception patterns of other individuals of that social group. In other words, the patterns would reveal themselves through their mutual differences. This last remark is important: the existence of distinct patterns would be revealed through the differences between the individual self-

perception systems of the group that makes up the sample. Therefore, those abstract patterns hypothetically postulated in this research, would not exist in an absolute sense; their coalescence would depend on the social sample which has been considered. In this respect **meaning** means **contrast** (Saussure, 1916). For instance, let us suppose the sample is composed of a group of Americans and a group of Amazonian tribesmen. In this case, the researcher will probably find, almost automatically, two main self-perception patterns (corresponding to those two groups), in the first instance. If the sample includes the referred group of Americans and (just) other Americans, the researcher will detect other self-perception patterns, even among the same individuals (the initial group of Americans) who were previously assimilated within a single pattern.

To view an individual self-perception system as a particular instance of a specific self-perception pattern, would mean to abstract some general features of that individual system, and consequently to disregard its peculiarly individual characteristics. This abstraction can be legitimately done in many ways (that is why an individual can be classified, without inconsistency, in different self-perception patterns, depending on the research context). As I said before, self-perception systems would organize themselves by means of a characteristic 'inner logic', which should basically be the same in the individual systems belonging to a particular self-perception pattern. That 'inner logic' would be located at a level deeper than those of its concrete realizations through specific concepts and intentions. Although the individual self-perception system would realize that logic by means of its peculiar concepts/intentions, the way in which these are interconnected would be similar in all the systems pertaining to a given self-perception pattern. For instance, a person can associate the notion of 'success in life' to the idea of being a famous fashion model; another person can associate the same notion to the idea of being a famous football player. The particular conceptual content is different, but the inner logic of the aspirations of both people may be understood as analogous at a higher level of abstraction: immediate success (still being a youngster) through physical talents and skills as well as a great deal of luck. The evidence for the commonality of this basic attitude is to be found in the other notions which they express (for instance their respective attitudes towards their academic future).

In the proposed model, self-perception patterns would play a double, descriptive/ explanatory, role. They would play a descriptive role because they would try to portray the 'deep structure' underlying individual self-perception systems. And they would be explanatory because that deep structure, on the one hand, would explain the surface structure of those systems and, on the other hand, would explain 'itself' by showing its characteristic form of organizational closure. In a nutshell, self-perception patterns would allow the **understanding** of individual self-perception systems. 'Understanding' can be conceived of as a way of explaining by describing and vice versa.

3.10. Self-expression as a way of access to Self-Perception.

The techniques used to obtain the empirical information on which a research is based, necessarily condition the content of that information. Although it may seem tautological, in any research project the method must be compatible with the theoretical framework which is being assumed³². The bridge between the theoretical, heuristic framework of this research, and the method and techniques that I am going to use in it, is the concept of **self-expression**. Self-perception systems, as presented in these pages, are also self-expression systems. There can hardly be personal self-perception without self-expression (to oneself or to others). This self-expressive capability of social individuals, offers the researcher the only consistent way of accessing the self-perception systems of those individuals.

Social individuals are permanently self-expressing themselves. But their self-expressions occur in different contexts or frames (Bernstein 1971a). Some of those frames would favour better than others the self-expression by those individuals of the characteristic inner logic underlying their specific self-perception systems. In general, the more externally constrained a frame is, the less likely it is that an individual self-expressing herself in that frame can substantially reveal that inner logic. On the contrary, weakly constrained frames (or frames constrained internally, not from the outside, but by the very individual who is the subject whose self-expression is being studied), generally allow a more 'authentic' self-expression. For instance, a personal

diary is likely to be more self-expressing in this sense, than the filling of a bureaucratic form.

That is why I used weakly framed (non obtrusive) techniques in this research. These are often more difficult to manipulate (for instance, statistically) than strongly framed techniques (such as closed questionnaires), but they can provide the sort of 'innerly structured' information for which I am looking. In addition, the use of those weakly framed and less developed techniques, is a methodological challenge, and I will propose some ways of implementing them, that may be of interest from a purely methodological point of view, in the next chapter.

NOTES TO CHAPTER 3

¹ Bem D. (1972): Self-Perception Theory.

² "Self-perception, an individual's ability to respond differently to his own behaviour and its controlling variables, is a product of social interaction". Bem, 1967: 184.

³ The notion of a bias in the 'processing of information' is a debatable one. It could be interpreted as a typical of expression the objectivistic informational outlook which is characteristic of traditional systems thinking, and specifically of the 'information processing paradigm' (Varela, 1979). From a less traditional point of view, there would be no 'bias', because there would not be 'objective information' out there which could be biased. From this point of view (von Glasersfel 1991), the self does not bias (external, objective meaning); it produces and reproduces meaning.

⁴ This attribution is common in many primitive cultures. See Lévy- Bruhl, 1927.

⁵ The concept of 'meaning' outlined in the previous chapter not only includes the Weberian double sense of 'comprehensibility' and 'purpose', but also Searle's sense of 'intentionality' and 'internal coherence' (Searle 1983: Chapters 6 and 8). Both insights provide the concept of 'meaning' with a rich theoretical framework in which it can be properly understood from a systemic perspective.

⁶ The notion of 'schema' or 'schemata' has been in use, in psychological literature, for quite a long time. From the schemata of Kant in the **Critique of Pure Reason** (1787); through Craik's definition: 'internal model of the world' (1934); to Piaget's definition of the **schemata of action** as the structure of "the generalizable characteristics of this action, that is, those which allow the repetition of the same action or its application to a new context" (Beth and Piaget, 1966: 235). In general, schemata is understood as a mental model of aspects of the world or of the self that is structured in such a way as to facilitate the process of cognition and perception.

⁷ "In contemporary psychiatric terminology, 'psychosis' is a classificatory and descriptive term, referring to a specific range of illnesses and symptoms, the illnesses being those in which the patient's basic competence as a person is called in question ... A psychosis is, therefore, any mental illness which is liable to render its victim **non compos mentis**, and unfit to plead in a court of law". Rycroft, Ch., 1987a: 657.

⁸ "Contemporary textbooks of psychiatry are notably cautious and uncertain in their approach to dissociation of personality and to hysterical dissociations in general... Hysterical dissociation states, including dissociation of the personality, seem indeed have more to do with the psychology of deception and self-deception than with any innate or acquired incapacity of integration... Contemporary psychoanalysis and psychiatry tends to take the opposite view: that the self is a pristine unit but uses defense mechanisms, notably repression, which make it unconscious of much of its total activity". Rycroft, Ch., 1987b: 198.

⁹ "Every idea contains a transmuted affective attitude toward the bit of reality to which it refers". L. Vygotsky [1934] (1986): 10.

¹⁰ "the self we come to know and the world we come to know are both assembled out of elements of our very own experience" E. von Glaserfeld, 1991: 19.

¹¹ Many sociologists, since Durkheim have stressed that the social reality of the person is not reducible to purely psychological factors, although those factors provide some dispositions to act socially in a specific way: "Suicide has been presented as an outcome of a given temperament, as an episode of neurasthenia under the rule of its same factors. But we have not discover any immediate and regular relationship between neurasthenia and the social process of suicide... (Although) the neuropath can show under certain conditions some disposition to suicide" Durkheim, 1897 (my own translation from the 1976 Spanish edition: 325).

¹² See in Chapter 2 the reference to von Glaserfeld relative to *The Illusion of Communication*.

¹³ Assimilation in Piaget's theory does not mean assimilation of the individual to the environment, but just the opposite of the environment to/by the individual. Piaget, 1971.

¹⁴ "Adaptive systems". Many natural systems, especially living ones, show a quality usually called **adaptation**. That is they possess the ability to react to their environments in a way that is favorable, in some sense, to the continued operation of the system. It is as though systems of this type have some prearranged 'end' and the behavior of the system is such that it is led to this 'end' despite unfavorable environmental conditions. The 'end' might be mere survival; evolutionary theory is based heavily on the notion of adaptation to environment." Hall and Fagen, 1974: 87. See also the definition of adaptation in note 35, Chapter 2.

¹⁵ "According to Sigmund Freud a large part of the mind is unconscious —though— essentially similar to the conscious mind in having wishes and fears and so on". Gregory, 1987: 785. See also Freud, 1948 (1981).

¹⁶ The 'I' or 'self' surely has a complex neural basis, but frontal lobes seem to play a decisive role in its constitution. "Damage to the frontal area results in a lost of self knowing identity, what w'are doing. It these lobes are disturbed we become incapable of planning, carrying out, or comprehending a complex action or idea...People seem to loose 'themselves' in a most terrifying and disheartening way when something in the frontal lobes is destroyed. they seem able to deal well with situation in which they have experience, but have difficulty knowing what to do in new circumstances. They loose the ability to monitor how they are behaving and how their actions relate to their intention. They often don't know why they are doing something. Their direction, their self, is largely gone... they were desouled of the self, and there was nothing left to oversee the sources of voluntary action". Ornstein, R. 1991: 153-154.

¹⁷ "If the gorillas I had been watching were spending most of their time worrying about their social relationships, and if the gorilla's brain had evolved largely for the purpose of doing that worrying, then might that not be what my brain —and other people's brains— were for as well?... Nowhere on earth can human beings survive outside society. And consequently nowhere on earth can human beings survive without a deep sensitivity to and understanding of their fellow creatures" N. Humphrey 1986:39-40).

¹⁸ Morin, E. (1980): 279. (the page number corresponds to the Spanish version; the translation is mine).

¹⁹ As already mention, Mead speaks of 'reflective intelligence'. For his part "Garfinkel has emphasized the principle of reflexivity. This states that descriptions about some aspects of the social world are simultaneously within (part of) the very world that they describe" H. Schwartz and J. Jacobs, 1979: 51.

Reflexivity is a result and a specific form of reflectivity: We are subjects capable to **reflect** the images of subjects. When we **reflect** our own image as a subject we enter in a **reflexive** (self-reflective) relationship with ourselves. Otherwise (when we reflect **other** subjectivities) we keep a merely reflective relation, which is not directly reflexive.

²⁰ J. Piaget, 1975: 5-47. (The pages number corresponds to the Spanish edition —1978—).

²¹ "From this perspective (symbolic interactionism), social meanings (which direct human behavior) do not inhere in activities, institutions or social objects themselves. Rather, meanings are conferred upon social events by interacting individuals, who must first interpret what is going on from the social context in which this events occur. This emerging gestalt (the 'definition of the situation') is seen to result from the interplay of biography, situation, nonverbal communication, and linguistic exchange that characterizes all social interaction". H. Schwartz and J. Jacobs, 1979:8.

²² "It is possible that the interaction between organisms acquire along their ontogeny a recurrent character and, therefore, a structural coupling, which allows the maintenance of the individuality of both individuals along the lengthy evolution of their interactions, is established". H. Maturana and F. Varela, 1984:121.

²³ For a deeper study of the concept of 'purpose' attempting to make it 'scientifically respectable and analytically useful' —in Buckley's words (1974: 219)—, see in **Cybernetics and Purpose** (Buckley (ed) 1974: 219-296) the following papers: Rosenblueth, R. *et al.* "Behavior, Purpose and Teleology": 221-225; Taylor, R. "Comments on a Mechanistic Conception of Purposefulness": 226-231; Rosenblueth R. and Winer, N. "Purposeful and Non-Purposeful Behavior": 232-237; Taylor, R. "Purposeful and Non-Purposeful Behavior: A rejoinder": 238-242; Churchman C. W. and Ackoff, R.L. "Purposive Behavior and Cybernetics": 243-249; and Moore O.K. and Donald, J.L. "Purpose and Learning Theory": 250-255.

²⁴ See in note 55 in Chapter 2.

²⁵ A self-perception system could be conceive of as the conceptual/ attitudinal/intentional aspect of one individual's personality. The personality would include some other aspects, less directly connected to conscious action. For instance, if a person dislikes curry sauce, this would be, in a way, a part of her personality, but not a part of her self-perception system (although her **knowledge** of the existence of that sauce, and her **avoidance** of it, would belong to that system).

²⁶ This type of purpose is viewed under different angles in cybernetics. For a close look see W. Buckley 1976:221-250, and F. Varela, 1980:63-69.

- 27 I am referring to Searle's 'thought experiment' of the 'Chinese room'. [1984] (1990): 37-39.
- 28 Saussure uses an analogy to show the independence of a language, as a system, from its past evolution: "In a chess game any position to be considered has as a peculiar property the fact of being free from its antecedents; the fact that such position has been reached via one path or another, is irrelevant. Anyone who has follow along the whole game has no advantage whatsoever over the casual onlooker who comes to see the state of the game at the critical moment; in order to describe the position, it is perfectly useless to remember what happened just ten seconds before. All this may be applied the same to the language, and upholds the radical distinction between dyachronic and synchronic phenomena" Saussure, 1916 (my own translation from the 1976 Spanish edition: 159-160).
- 29 For a review of Mead, Dupuy and Atlan in relation to the ideas of novelty and emergence see Baert 1987a and 1987b.
- 30 For instance Kurt Lewin, who criticizes the paradigm S—R, typical of behaviourism, as follows: "...the relationship S—R ... is a triggering relation, a not a causal relation. However, curiously enough, most of current scientific research in the field of psychology deals exclusively with triggering conditions and relationships. It especially calls for attention the fact that a distinction as fundamental as that between triggering and causation has remained completely ignored in psychology even at a **conceptual** level". Lewin, 1991: 118 (my own translation from the Spanish edition).
- 31 A central point of contact between the behaviourist approach and social theory has been the concept of socialization. See, for instance, the following account of the socialization process: "Step by step, through punishments and rewards —very often by means of signals of disapproval and non violent reproaches— the first group to which the child belongs, starts to mould his personality according to their values and to their image of the world". Giner, 1969: 77.
- 32 This constructionist view has being assumed explicitly by Margaret Mead (1975) and most recently by Frederick Steir 1991: 163-185.

Chapter 4

Description of the Empirical Part of the Research

4.1. The subjects of the research: Adolescents in a decisive period.

A. Elliot (1992:1) points out that

"human beings create a self-identity, developing a sense of self that is sustained, consolidated and refashioned across time".

This creation of a self-identity occurs through a process in which "the psyche and the social field interlace" (ibid). According to the hypothetical model presented in Chapters 2 and 3, a personal self-perception system may be considered as a reality which produces and reproduces itself in an adaptive way through the individual's actions and interactions in a given social environment.

In this development of the self there are some stages in which the adaptation process of an individual's self-perception, undergoes basic changes¹ that are going to determine the whole future of such evolution. Adolescence, mainly in Western cultures (M. Mead, 1928), is one of those stages. It is in adolescence when in parallel with the physiological transformations characteristic of that period, the transition to an adult scheme of perception of reality occurs (B. Inhelder & J. Piaget, 1958; E.D. Niemark, 1975; J. C. Coleman & L. Hendry, 1990; J. Coger & A. Peterson, 1984, etc.).

There are other studies that investigate the capability of individuals—specifically during adolescence—for the self-generation of goals and plans (Powell, 1982) in consonance with the presuppositions of the present research

about human reality. In any case, the importance of decisions made in adolescence has been studied by sociologists and psychologists long ago. Many of the researches are interested in determining the influence of peers and parents in the educational and occupational decisions of the adolescents (Coleman, 1961; Haller, 1960; Brittain, 1963; Kandel, 1969...).

In those analyses adolescence is viewed as an important inflexion point in the individuals' perception of the 'self' and of the world. All of them also stress the relevance of this period for the educational and occupational future of adolescents. Powell argues:

"There is an increasing capability for the self-generation of goals among individuals. Individuals plan life styles and careers that extend over the whole of their life span, and can plan for the kind of persons they will become in the future. The choices an individual makes through the life span determine the course of development and the role that cultural and genetic programs may play in the process... For example, many individuals make careers choices early in adolescence, or even in childhood, which influence the rest of their lives, including how their inherited abilities are developed, how their abilities interact with the environment, and the range of choices they will be able to make later in life". A.Powel *et al.* 1982: 371.

The Spanish teenagers who are the subject of this research are about thirteen years old. They are in the last year of compulsory education (EGB). At the end of that year the ones who fail, can only continue their studies in the vocational branch of secondary education. The ones who succeed can choose between academic or vocational paths. Therefore, these adolescents are placed at the beginning of that critical period of personal development in which they are going to take some fundamental decisions. These decisions, as Powell has argued, would most probably shape their way of integration as adults in society.

The study of the self-perception systems of these students can provide an image of the initial phase of their personal evolution. The individuals' self-

perception systems, as I argued in Chapter 3, would be the reality which constitute the basis for their decision making and hence for their social action. Therefore, it can be hypothesised that the educational behaviour of the individuals who are being studied, would fundamentally depend on their personal self-perception systems. The performance of these individuals in the education process would certainly be constrained by many factors, but the specific mechanism through which those factors influence the actions of the individual can only be the self-perception system of that individual². For instance, suppose an individual is not very bright and has a tendency to underachieve academically; this tendency, however which, is based on some psychological features of that individual, only influences the actions of such an individual through her peculiar self-perception system. If this self-perception system strongly motivates the individual towards academic achievement, she may overcome her difficulties, at least to some extent.

Due to the central role that self-perception systems play in the students' attitudes towards education, any educational **supply** would only achieve its objectives in an efficient manner when it is adequately geared to the subjective educational **demand** of the individuals at whom it is targeted. And the self-perception systems of those individuals would be precisely, the realities which generate that demand.

As was outlined above, in the Spanish educational system, at least until the current reform³, the outcome of the final year of the compulsory period has been decisive in determining the further relationship of the students with the educational system and as a consequence with the labour market and with adult society in general. It is at the end of the compulsory period —at 14— when students confront a stark choice ("bachillerato" —academic secondary education—, "formacion profesional" —vocational education— or else dropping out of the educational system altogether.) This choice would have decisive personal and social consequences for them in the future. This is the reason why this research has, as its area of study, the examination of the subjective factors at work at this critical stage of personal evolution which coincides with the main bifurcation in the educational process.

4.2. The research stages.

I shall give a general outline of the process of empirical research that I have carried out before presenting, in the following sections of this chapter and in subsequent chapters, a more detailed account of each of these stages. To give a whole picture of the research process in brief will be convenient because this research develops through **three different stages**, whose relationship should be taken into account from the beginning.

The first of these stages is the **content analysis** of information provided (as written essays) by the subjects of this study.

The second stage will be the **sociosemantic analysis** of the data generated by the previous content analysis. This second stage will be dealt with in the Chapter 5.

Finally the third stage will be the full **interpretive analysis** of all the information gathered by the researcher (including the result of the previous content and sociosemantic analyses). I shall elaborate this third stage in Chapter 6.

4.3. The subjects and the data of the research.

In this research I use two kinds of data about the students. First, what I shall call **background data**. These data (information about age, gender, school, etc.) play a subsidiary role in this investigation. The main data are supplied by the students through written essays. Those essays, to which I shall refer as 'the texts', contain the information elicited by the students in a weakly framed self-expression process prompted by the researcher. I call the data provided by the texts **textual data**.

In order to obtain the texts I asked 116 students of the eighth (and last) year of EGB —compulsory education—belonging to four state schools in Madrid, to write an essay on the following topic "**How do you see yourself as**

a youngster, as a middle age person and as an elderly person?". They had one hour to do this task.

Those four schools are located in four areas of different socioeconomic level (from the lowest to the highest level: Fuenlabrada, Hortaleza, Virgen del Cortijo y Ciudad de los Periodistas).

4.4. The use of essays as an instrument of research.

4.4.1. The use of essays to elicit information.

One important aspect in any research is the choice of adequate techniques in order to obtain the information that the specific kind of investigation requires. I shall follow a constructionist point of view here in the sense that I consider that observers (sociologists, for instance) merely actualize one of the potential 'readings' of reality. Although they cannot sensibly impose any sort of reading on a given reality⁴. This constructionist insight is added to a partial subjectivism⁵ and relativism, due to the fact of being part and parcel of the reality to study, society. As Lèvi-Strauss has pointed out: "The observer himself is a part of his observation" (1960:11; 1971:25). J. Ibañez takes Lèvi-Strauss' perspective further:

"The observer must assume this limitation (being part of his observation), he must admit that he cannot build a universally compatible knowledge, that the communication between the ones who know about society, sociologists, retains, as a specific noise, a vector of a dual confrontation. It does not exist a unitary and exhaustive scientific knowledge, the sociologist's activity includes a non-reducible, ideological element; the sociology is fragmented in a plural and contradictory net of possible sociologies" (1979:36).

Taking this view into account, we must choose very carefully the specific techniques that we are going to use in our research and ponder from the beginning the reasons for our choice directed by the goal of a maximum presence of the data and a minimum of the researcher in the final output. It is

also convenient to consider that any particular technique constrains the object of the research and will have specific effects on the resulting analysis⁶.

Each technique has its characteristic pros and cons. The use of **open self-expression techniques** such as **essays**, for obtaining relevant information about the subjects of a research like this, show some advantages when compared to other techniques more widely used (questionnaires, interviews or direct observation). In the first place, by using the essay technique, the subjects themselves are the ones who decide on the content of the information they provide as well, as on the form of its expression. When using this method -and to some extent with any method- the specific frame, the occasion and the motive of the interaction between the researcher and the subjects is imposed by the researcher. It should be observed however that in this case the specific motive, the topic proposed for the essays, is very general and allows an almost total freedom for the subjects' self-expression. Apart from this topic, the students were given no further instructions concerning which aspects of their lives they have to refer to in the essays. In this technique, information is elicited, by provoking its spontaneous production by the subjects; information is not prefigured —'prepackaged' so to speak— in the form of specific questions, as is the case in a questionnaire. In this way the researcher only minimally conditions the response of the subjects with her own self-perception, unlike other techniques. In contrast to the higher capability of analytical discrimination which is the main advantage of questionnaires, a technique like this, which consists in analyzing the content of individual essays, is valuable because of its capability of holistic discrimination, in other words: of the detection of coherent totalities. This type of discrimination is especially valuable for research which tries to explore the self-perception models present in a group of individuals.

The essay technique shares some of the characteristics that are typical of other qualitative techniques; for instance, it resembles the open interview technique, which in Morin's words has the following features:

"The open question, the spontaneous answer allow (mainly in deep analysis) the elaboration, the true sensibility, a richness of meanings, all at the same time: but the maximum risk of mistake is on the side of the

researcher, of her/his aptitude to decode the message of the interviewed (in our case, the writer) of her/his possibility to establishing comparisons, to reduce and transform a raw human document in scientific data" (1984:185).

Essays on a topic similar to the one proposed in this research have been used in sociology by several authors interested in understanding the attitudes of young people. Perez Diaz (1969), Enrique Gaston (1978) and Diaz Martinez (1983) in Spain; Bernot and Blanchard in France (1952) have used an almost identical topic in different researches. In Britain J. Harding also used the same topic to obtain essays written by students in their teens, but she worded the topic from a different temporal point of view: "Pretend you are now 80 years old. Describe your life from your teens until your old age".

4.4.2. Essays/Discussion groups/Questionnaires: A comparative view.

Discussion groups, essays and other projective techniques have been used in market research to a greater extent than in academic research, both in England and Spain (R. Walker 1985; J. Ibañez 1979; K. Young 1980)⁷.

Ibañez (1979: 262 and *passim*) draws a comparison between two very different techniques of research: the discussion group and the questionnaire. This comparison may be extended to include a third technique: the use of essays as is proposed in the present research. I will follow Ibañez's steps in explaining this comparison. He considers discussion groups and questionnaires in three particular aspects: (i) the selection of the sample, (ii) the performance of the subjects (their production of the discourse) and, (iii) the analysis of the results.

(i) **Selection of the sample.** Ibañez distinguishes two basic techniques for selecting the sample of a research: statistical and structural. Statistical selection is used in questionnaires; it takes separate unities (individuals) who are related to each other only through the algebraic relations established a posteriori, in the interpretation of the questionnaire's results. For instance, individual X can choose response A and just for this reason she is included in

a set of individuals (those who have also chosen answer A) with whom she has is not necessarily connected in any other way. Besides, the units are selected according to the general criterion of 'including in the sample a part of everything and more of the most abundant'. The selection criterion used in a discussion group is structural: individuals are selected according to their (expected) capability to interact in such a way that they produce related discourses in the 'controlled' interactive situation of the discussion group. Now, that situation in a way mirrors possible interactions and structural relations characteristic of the 'non-controlled' situations of ordinary life.

Regarding the essay technique, the selection of the sample shares characteristics of the two previous techniques. On the one hand, the essays technique tries to select a part of everything, (schools having a different social background), as the statistical selection does. But on the other hand, although there is no interaction between the students (all write their own essay without interacting with the group to which they belong), their spontaneous discourses necessarily reflect their structural relations: the information provided by these discourses is organic, holistic, instead of piecemeal and forcibly extracted from the outside (by the researcher), as is the case in questionnaires. Ibañez compares the discussion group to a hologram: in an optic hologram, the object is generated by means of an interference pattern of light beams. In the discussion group the interaction between the participants also generates an 'interference pattern' which generates a structured object of a social kind.

Similarly, the analysis of essays that I propose can be compared to the working of an optical-neural computer. This type of computer (based on processes of interference between different holograms) can 'recognize' a given image among other images which contain that image among others. The input image (for instance, part of a human face) is projected by a laser beam, into a system composed by a beam splitter, a threshold device, several lenses and mirrors, a pinhole array, and two holograms that contain the whole input face among several other faces. After a number of iterations consisting in optical-feedback loops, the system selects the whole input face, as a result of processes of optical interference between the input (part of that face) and the holograms (containing the whole of that face among others) (Abu-Mostafa and Psaltis, 1987).

It may be argued that although each essay only contains partial information about the self-perception system of the corresponding individual, the 'resonance' between those essays and similar essays allows the reconstruction, in holistic terms, of those self-perception systems, or more exactly, of abstract models of them. This 'resonance' is instrumented by means of the technique of 'sociosemantic analysis', which will be explained in the next chapter. In a way, this methodological outlook allows distinct fragments of information to interact and construct concurrently characteristic universes of meaning, which represent different types of self-perception systems. In a sociosemantic analysis, concepts interact ('resonate') with concepts through individuals, and individuals interact ('resonate') with individuals through concepts. In this way the meaning of each concept and the information provided by each individual is completed by the meaning of other concepts and the information provided by other individuals. The technique of multidimensional scaling makes it possible to visualize those interactions. Thus, from a set of fragmentary information we can produce a holistic view (a map) of the semantic and social structure of a given group.

(ii) **The performance of the subjects.** With regard to the role played by the subjects of the research, the essays are closer to the discussion group than to the questionnaire, in spite of their written form. In the essays technique the discourse is provoked by the moderator⁸ by means of the proposal of the topic, as is the case in the discussion group. From that moment the subjects express themselves 'freely'⁹ in both cases. On the contrary, in the case of questionnaires the researcher strongly frames the subject's discourse by selecting and wording the questions to be answered as well as the range of admissible replies.

I have used the word 'free' between inverted commas because neither the participants in a discussion group nor the writer of an essay is absolutely free. The participants in a group see their freedom of expression hampered by the other participants (A. Branthwaite & T. Lunn 1985:108 and passim): A participant cannot risk any opinion in a group, she must avoid subjects that may be touchy for other participants. Her opinions may be influenced by other participant's opinions and so on. Similarly the writer of an essay probably takes into account who is asking her to write it, who can read it, etc., and this

clearly modulates her self-expression. But all in all these two techniques generate a much more 'authentic' kind of information than questionnaires, although the referred influences must be taken into account by the researcher.

In both the discussion group and the essay technique the moderator/researcher does not control the specific topics to be dealt with, neither the limits not the order in which the discourse is produced: the participant in a group and the essay writer determine what they say, how it is said and in which order. In the case of questionnaires, the interest, the frame of mind, the interpretation of reality of the researcher are inevitably translated into the selection of questions and their formulation. In contrast the essay as well as the discussion group allows the subjects to directly express their views and interests in their own words making their own selection of topics.

For example, if I design a questionnaire about the topic that I proposed to the subjects of this research, I would have to formulate a specific set of questions which would force the participants to follow my line of discourse in answering them. Most probably there would be aspects that some of the subjects would not find relevant at all, that they would never think to talk about if they were not obliged to by the questionnaire. At the same time there would be others aspects that they would like to talk about if they had the opportunity to do so. In this way the questionnaire alienates the respondents from their personal discourses. When the researcher proposes the referred topic for a discussion group or an essay, things develop in a very different way. The participant subjects decide which aspects of their foreseen future they want to talk about (hence to think about), and in which way they choose to express it. Their self-expression is 'free' to produce the kind of discourse they want.

(iii) **Analysis and Interpretation.** The interpretation of the discourse produced in a discussion group is done 'in real-time¹⁰' by the participants in the group. That 'real-time' interpretation works in a feedback and feed-forward mode, and steers the process of discussion. Of course the researcher additionally interprets the discourse produced by the group, but this discourse is already the outcome of a fluid process of group self-interpretation. The moderator and the participants in a group interpret the situation at every

moment and react in consequence. On the contrary, in the case of essays and questionnaire techniques there is no possible feedback; the researcher just works with a final output which cannot be modify. In this respect, the difference between essays and questionnaires lies in the fact that essays (as discussion groups) allow an open, 'creative'¹¹ interpretation, whereas the interpretation of questionnaires is closed (it exists a priori, and is done when the researcher designs the questionnaire; if the interpretation were not a priori and closed, the addition of the answers and their further statistical treatment would be meaningless. In a public-opinion poll or in an interview with questionnaire the meaning must be prepackaged, in such a way that any answer is literally and semantically equivalent to any other identical answer. In order to do this a detailed plan of treatment of the information to be obtained must be established in the process of designing the questionnaire. In the design of a questionnaire the meaning of the answers is imposed by the researcher, as S.R. Brown (1980:3) has argued,

" By defining ahead of time what a response is to mean, the observer is imposing his will on reality, exacting hostages of innocent responses scheduled for future occurrence."

This is impossible in the case of open techniques; here the researcher does not have the possibility of fixing and knowing in advance what the subjects are going to say, how the information structure is going to look or any other thing about the content. The line of interpretation and analysis of discussion groups and written essays is not known beforehand¹². It is based on a content analysis of the discourse produced by the subjects. This content analysis operates on the texts generated by those subjects and produces an a posteriori information structure which must be further interpreted. I shall detail now the concrete process of content analysis done in the present research which constitutes the first stage of my empiric research.

4.5. Conceptual and attitudinal content analysis.

The kind of content analysis which I am going to develop is rather different from other methods which also bear the name of content analysis.

Frequently content analysis is understood to be a study of the literal expression of meaning; more exactly as an analysis of the semantic nuances that different forms of expression give to meaning. In a nutshell: some kinds of content analysis study meaning at the level of grammatical meaning rather than at the level of lexical and conceptual meaning¹³. Grammar works following its own rules, and hence it is possible to study a text from the point of view of those rules. But I am interested in another sort of content analysis: an analysis primarily made from the point of view of semantics. Consequently I shall assume that the basic content of a text lies in the concepts and attitudes which it expresses. From this point of view, the same concept/attitude may be expressed in different ways; therefore with different connotations. But still the basic concept/attitude remains essentially identical through all those different ways of expressing it. This kind of content analysis that assumes as its tasks the detection of the conceptual/attitudinal references underlying texts, is necessary in order to implement the technique of sociosemantic analysis which will be dealt with in the next chapter.

The objective of this kind of content analysis, as implemented in the following pages is to abstract the conceptual and attitudinal content of the texts (the essays) produced by the students, as a first step to understanding their self-perception systems. The relevance of analyzing the language explicitly used by a person as a means to understand that person's perception of her/himself and of the world is pointed out by Coxon (1979:2):

"Usually we gain access to conceptions by means of language. When we communicate with others we select concepts (which are component aspects of our models of the world)".

In accordance with that conception of content analysis, the formal aspects of the essays (such as extension, vocabulary, style, etc.) as well as other strictly linguistic aspects (to be indicated in section 7.1) will not be considered in our analysis. Certainly a concept or an attitude can only be separated from its linguistic expression at the cost of losing some information in the process. Nevertheless the kind of attitudinal/conceptual analysis that I am proposing disregards those aspects of the text that are 'purely linguistic' (for instance, the use of specific verbal moods, the specificity in the use of

adjectives, etc.), in order to produce adequate data for the referred sociosemantic analysis, which should follow the stage of content analysis. By taking that methodological option I am not suggesting that those linguistic aspects are not significant. In fact there are no 'purely' linguistic aspects at all, because all the features of a text portray the cognitive strategies (the way of **conceiving** reality) of its author¹⁴. Analyses stressing these aspects have already been developed in the field of sociology of education, by several authors (Bernstein 1970, 1971a, 1971b; Adlam 1977; Turner and Mohan 1970; Labov, 1969, 1972).

The methodological option¹⁵ that chooses to focus on the purely attitudinal/conceptual content of the subjects self-expression responds not only to the need to implement the sociosemantic technique, but also to the general purpose of this research, which is to abstract the **models** of self-perception present among those subjects. If my purpose had been to study individual self-perception systems following, for instance, a case study methodology, referring primarily to the literal expressions of the text would have been unavoidable. But I do not intend to use a case study methodology, although in chapter six I shall refer to specific cases in order to exemplify the self-perception models that I shall postulate.

4.6. Epistemological problems posed by the essays technique.

In this section I shall discuss some general problems, of an epistemological kind, which specifically arise from the use of the essays technique as an instrument of research.

4.6.1 Content analysis and intuitive analysis.

An analysis of the content of a text (especially, of its conceptual and attitudinal content) may be done in a purely intuitive way. The researcher can just try to **understand** intuitively the similarities and differences between different texts. This can provide a basis for the classification of those texts. However a purely intuitive analysis depends exclusively on the researchers'

social insight. This insight is, on the one hand, necessary and extremely valuable; the bulk of social research hinges in that insight, and no 'objective' technique can compete with it in terms of flexibility and depth¹⁶. But on the other hand the researcher's insight imposes on the information that she scrutinizes her own limitations and blind spots in understanding. Our social insight—that of ordinary social subjects as well as that of social researchers—is at the same time very powerful and very biased¹⁷.

An 'objective' method of content analysis can discipline the researcher's intuition, guide her insight, alert her about her blind spots, and act as a general heuristic tool. It can be said that 'objective' methods can only work as heuristic tools and control mechanisms of the sociologist's insight. Certainly any 'objective' method of analysis is also a construction of the researcher, it does not exist in itself. As Krippendorff says "in content analysis **the content of a text always is the analyst's construction**" (K. Krippendorff 1991:128). Both objective and intuitive methods show their 'goodness of fit' with respect to reality by locking into each other and being mutually consistent in their results.

When a researcher faces a content analysis, by using a method such as the essays technique she does not only makes a 'translation' (U.Eco, 1975) of the texts; she locates herself at a meta-level in relation to the texts. Placed at that meta-level, the researcher can establish several 'frames' (G. Bateson, 1972: 184-192) from which she can read a given message in different ways, depending on the frame in which she locates that message. From that meta-communicational level the researcher can place each individual text within the frame of the whole sample of texts (the one hundred essays), operating as a 'model reader' (U.Eco, 1979), and covering the empty spaces of the texts.

4.6.2. The Problem of homogeneity.

A fundamental presupposition behind the use of textual data such as those provided by essays in this investigation, is that each individual does express critical aspects of her self-perception system in those essays. The use of this method assumes that in fact individuals are going to express

spontaneously at least some of these critical aspects. There is no way a priori to ensure that it is going to be so, the researcher must just look at the results (the essays). Nevertheless the framing of the essays by the researcher —and above all— the proposal of an adequate topic should increase the chances of getting a textual outcome that provides a deep insight into those critical aspects.

However, at this point the essays technique is exposed to an apparent shortcoming: probably, each individual is going to express different aspects of her self-perception system, and with different degrees of candour, and that entails an additional difficulty in analyzing the whole set of texts in a coherent way. I shall deal with the problem of frankness afterwards. Regarding the problem of diversity between the essays' content, it should be noted that such an apparent lack of homogeneity, instead of posing a problem constitutes the basic frame which gives sense to the meanings embodied in the texts: meaning is built not only in what a subject says, but also on what that subject does not say. In the essays technique the deeper differences in the meanings expressed by two subjects are not in their different opinions about the same things, but in the fact that they choose to give their opinion on different things.

Other methods of gathering information, like for example questionnaires, ensure the homogenization of the expressivity of the individuals (the content that they express) to whom information is requested (the content that they express) by strongly framing that expressivity (for example, through specific questions which elicit answers of equivalent specificity). The price for this homogeneity is always a curtailment of the individual's expressivity. To some extent, a questionnaire gives information about what some people (those who answer the questionnaire) think about other people's (the authors of the questionnaire) thinking. On the contrary, weakly framed methods of information gathering like essays and discussion groups allow a much freer expression of the individuals: they do not just give their opinion on something, but choose about what to give an opinion. Homogeneity is not the aim of qualitative research as R. Walker (1985:3) points out :

"whereas the quantitative approach necessitates standardized data collection, qualitative researchers exploit the context of data gathering to enhance the value of the data".

4.6.3 The problem of relevance.

The advantages of strongly framed methods of information gathering come from the fact that the homogeneity which they impose on the expressivity of the subjects who are the sources of information, automatically focuses that information on the very process of its generation. This focusing power means, on the one hand, that a very specific sort of information can be generated (ex.: 'Do you agree with the Maastrich Treaty?'); and on the other hand, it means that the interpretation of that information seems to be direct and unequivocal. Thus, a strong frame provides a sort of built-in capability to focus information. On the contrary, weakly framed or open methods cannot provide such built-in capability to focus the information to be gathered.

In strongly framed methods, the relevance of the obtained information is guaranteed by the focusing power of the frame. What then is the guarantee of the relevance of the information obtained by a weakly framed method? Well, there is no a priori guarantee; in weakly structured techniques the relevance of the information gathered is not guaranteed beforehand by the frame, but only facilitated by that frame. The actual relevance of the obtained information would be discovered by the researcher in an a posteriori interpretative process. Hence, the information gathered through a weakly framed technique made relevant by the researcher using some specific process of interpretation. It is that process which creates its own criterion of relevance¹⁸.

But if the information gathered by means of weakly framed methods is not automatically relevant, certainly it should include elements apt to become relevant through adequate interpretation. Why should it be expected that the generated information includes those relevant elements at all? Specifically, why should the essays express significant aspects of the students self-perception? The answer is very simple: because the weak frame imposed

by the researcher —and above all— the topic of the essay is sufficiently general and, at the same time, deep enough to provoke a global reviewing by the individual of his/her self-perception system as a whole. The fact that the contents of that reviewing are not homogeneous does not diminish their relevance, so far as they illuminate central aspects of the individual's self-perception system. On the contrary, it is just this lack of homogeneity that gives those contents a special relevance, because it indicates the existence of qualitative differences between the self-perception models underlying those contents. In fact, whereas in closed methods it is the convergent aspect of information that is relevant, in open methods it is the divergent aspect of information that is relevant.

4.6.4. The problem of reliability.

Certainly, neither the answers to a questionnaire nor the expressions within an essay, should always be considered sincere. People can prevaricate in an essay, as they can prevaricate with a questionnaire. Also, in an essay they can express themselves in a more or less reserved manner, as they can choose not to answer some questions in a questionnaire or in an interview —however in this case to deny information requires explicitly to say 'no', and that usually implies some psychological stress—. Consequently every method should face the problem of the reliability of the data that it generates. Nevertheless, there is a subtle difference between strongly framed and weakly framed methods: it is more difficult to prevaricate in an essay than to prevaricate with a questionnaire; the reason for this is that in the first case you have to construct your own prevarication, by creating the context in which it is going to look coherent —which is not so easy—, whereas in the second case the lie is already at hand —the context is created, you only have to choose the untruthful answer. As a result of that, it is easier to detect incoherences in a context of open expressivity than to do so in a context of strongly framed expressivity. In reality the students who wrote the essays showed a remarkable candour; there are 'objective' incoherences (mismatch between actual reality and expectations) in their texts, but no pretenses.

4.6.5. Open and synergetic, versus closed and analytic meaning.

To summarize the previous remarks on the characteristics of open methods in general, and the of the essays technique in particular, these methods may be describe as **synergetic**. Strongly framed methods are lacking in synergetic capabilities, because of the analytical outlook. For instance, a set of answers to a closed questionnaire does not add any meaning to any other set of answers (the meanings of different sets of answers do not interact). On the contrary, open methods work in a holistic, synergetic way. In these methods the individual meanings do interact; in other words, meaning is interpreted as a whole reality, through a synergetic relationship between individual meanings.

That holistic conception of information when gathered through weakly framed methods, poses additional problems. Because if the information provided by an individual should be related in the process of interpretation to the information provided by other individuals, it is necessary to relate through some specific technique the informative content of the individuals' essays. The relationship of the informative content of the answers to a questionnaire is a priori determined by the constraints imposed by the questions and the permissible answers (any answer says strictly the same as any other answer that says the same). In contrast, when open methods are used, that relationship has to be constructed a posteriori through some processes of interpretation of that content (that is the aim of sociosemantic analysis). And the researcher should not forget in this process that

"in content analysis the context of a text always is the analyst's construction. It is created within an operational discourse and ultimately directs the network of arguments and computations of an analysis" (K. Krippendorff, 1991:128).

4.7. Methodological problems of the essays technique.

Besides those epistemological problems, the essays technique poses more specific problems of a methodological kind. The researcher confronts texts which must be analyzed following procedures as explicit as possible. In

this section I shall detail the methodological presuppositions and specific procedures that I have followed in the content analysis of the texts.

4.7.1. Linguistic and conceptual approaches.

The essays' informative content is embodied in its literal content. Therefore, in order to determine that informative content we must start from the consideration of that literal content. Such content can be approached from two basic perspectives, to which I have previously referred when speaking of the level of grammatical meaning and the level of lexical meaning in a text (see section five of this chapter). The grammatical level roughly corresponds to the literal, 'linguistic' level of a text¹⁹, whereas the semantic level would correspond to the underlying 'conceptual' structure of it.

As I intend to reach that underlying conceptual level, I should face, as a first methodological question, the problem of the relationships that exist between such conceptual level and the literal, strictly linguistic level of the texts—which is the reality immediately given to the researcher.

From a linguistic standpoint, the information carried by the literal content of the essays would consist in the specific patterns of use of the language revealed through that literal content. For this approach, the presence of certain lexical, morphologic and syntactic traits in the language of some individual would be the relevant (and revealing) aspect of that individual's literal expressions. From a conceptual viewpoint, the relevant information expressed by the literal content of the essays would rather be the concrete conceptual frame portrayed through that literal content. Both approaches are quite legitimate, and may be attempted separately by abstracting one aspect (linguistic or conceptual) of the literal content of any text.

As already noted a 'linguistic approach' has been applied in the specific field of the sociology of education since the 1950's and with considerable success²⁰. The basic assumption of that approach has usually been the conception of linguistic differences as indicating social differences on the one hand, and cognitive differences on the other. Those cognitive differences are frequently understood as diverse cognitive styles. It is an

approach that tries to distinguish the formal traits of cognition (or at least, of the linguistic expression of cognition) in order to reveal different ways in which those traits are systematically combined. Those diverse forms of knowing would be the different cognitive styles which are relevant to sociology in so far as it can be shown that they are distributed among a given population in accordance with some of the social characteristics of that population. Undoubtedly the discovery of different cognitive/linguistic styles and that of their diverse distribution in society has been an important, although polemic, theoretic finding²¹.

However the linguistic approach has limitations which originate in some of its basic assumptions. The problem is that this approach, by trying to infer from just the linguistic features of some subjects' expressions not only the cognitive characteristics of those subjects, but also its social standing, misses out another essential aspects also revealed by those expressions²². The linguistic outlook is built upon a double process of abstraction. First, it abstracts cognition from other aspects that determine human behaviour (affective and emotional aspects). Second, that viewpoint abstracts the form of cognition from its content. Certainly, this double abstraction, when executed upon human expressions, leaves out of consideration fundamental aspects of those expressions. The specific sort of behaviour that characterizes human beings is human action. Now, cognition is only one aspect of human action; besides having a cognitive aspect, human action has a volitive (hence attitudinal and, in the last analysis, affective and emotional) and a social aspect (the concrete social process of interaction entailed by a certain action). It is in action where those cognitive, volitive and social aspects interact and mutually determine the development of each other. It is in action that all those aspects, cognitive, volitive and social generate (produce and reproduce) themselves, in a relationship of reciprocal causality²³.

Furthermore, cognitive, volitive and social aspects are related in action concretely, through their specific contents. A purely linguistic approach to cognition, through the referred double abstraction, on the one hand understands the notion of cognition out of the action stage, in isolation from its relation to volitive and social aspects. And on the other hand, that approach considers the concept of cognition in a formal way, and as a result it overlooks

the contents that are present in any act of cognition. Due to this double disregard of both the action context and the contents of cognition, the linguistic approach to cognition cannot give a satisfactory genetic account of the many-sided reality of social cognition by itself. That approach is capable of describing how cognitive styles are different, but it does not explicate how those different styles are related to characteristic concrete contents and to specific volitive styles, nor does it indicate, other than in generic terms, how those cognitive and volitive styles generate and evolve in society.

The 'conceptual approach' to the content of the essays, which in a way is complementary to the linguistic approach, is not primarily interested in the specific traits of language usage expressed in those essays, nor is it chiefly concerned with the formal cognitive styles revealed by that content. It is fundamentally interested in the specific self-perception systems exemplified by that content.

Now, a self-perception system is a concrete conceptual reality; it is made up of particular concepts which are coherently related. Probably self-perception systems have characteristic cognitive forms, but they are not those forms, but realities in which any form is embodied in a concrete content: self-perception systems are meaningful systems only through that content, and consequently the abstraction of it amounts to the destruction of the meaning and hence of the very essence of those systems. Accordingly, a self-perception system is not a cognitive style. It integrates cognitive, volitive and social aspects, and it does so in a concrete way: the cognitive aspect, has a concrete content, as this is also the case for the other aspects.

To sum up, when assuming a conceptual point of view, the relevant contents of the essays are the specific concepts expressed in them, concepts which are not only of a cognitive type, but also of a pragmatic and volitive nature: concepts about things, but also about actions and desires.

4.7.2. The reading of the texts.

The purpose of this content analysis that I am proposing is twofold: first, to understand each text, its characteristic internal coherence, in the

context of the whole set of texts and in contrast with the other texts. Second, to discover the type or model of self-perception system of the student who wrote it. A particular text is viewed as a concrete manifestation which indicates the author's system of (social) self-perception. The comprehension of texts' content should be done by means of a feed-back loop: individual text→whole of the texts→individual text... A first reading of an individual text provides an initial holistic picture of the author's self-perception. When all of the texts have been read once, the researcher should start a second reading. Now the meaning of each individual text is redefined by the researcher as she takes into account the content of the other texts which she has already read. It is a process that must be repeated as many times as necessary, in order to refine the particular meanings of the texts through their synergetic relationships. This stage of the process of content analysis is purely intuitive, though fundamental: the researcher needs to have a detailed knowledge of the texts before she tries to pass on to the subsequent stages of the analysis.

4.7.3. From expressions to concepts.

In the second stage of the analysis, the researcher must 'translate' the expressions which make up the texts into concepts. This translation represents a major methodological problem. Concepts are embodied in literal expressions but obviously the relation between the concepts and their literal expressions is not a univocal: different literal expressions can represent the same concept, and the same literal expression can represent different concepts. Homonymy and synonymy are wide spread phenomena in natural language.

On the other hand an expression can include several concepts, located at different levels within that expression, for instance the expression "One of my sons should be un upholster" includes, at least, the concepts "wanting to have sons", and "wanting to be an upholster". The second concept is referred to and qualifies the first (one of the sons). Consequently, we can understand the whole expression as a single concept ('wanting that one of his sons becomes an upholster'), or as a combination of concepts located at a lower level. Therefore a specific expression can be 'read' in different ways from a conceptual point of view, and there is not automatic correspondence between expressions and concepts. This lack of automatism becomes more evident

when one considers that the type of information making up the basis of the analysis in this research is of a weakly framed type. Strongly framed methods can avoid many of the pitfalls of homonymy/synonymy by controlling the wording of the information to be analyzed. This possibility hardly exists in the case of weakly framed techniques. When using these techniques it is not possible to achieve, through the imposition of an a priori standard, a direct and unequivocal equivalence between expressions and concepts. Besides, that equivalence cannot be thought of as being established just within each individual essay, independently from the contents of the other essays: as already stated, in this research the information spontaneously produced by each individual is going to be interpreted through its synergetic relation with the information generated by other individuals; as a result, the difficulties originated in the phenomena of homonymy/synonymy, which are a feature of natural language, are going to be compounded by the difficulties arising from individual differences in expressiveness.

4.7.3.1. Identification of conceptual expressions.

Although an automatic translation from expressions to concepts is not possible, some criteria to guide the researcher's insight along that translation seem necessary. Some kind of conceptual reduction of the expressions constituting the literal content of the texts is required in order to determine their conceptual content. First of all, it is necessary to establish a criterium to select the kind of expressions which are going to be considered as conceptually significant. In very general terms, an expression may be defined as anything that carries some meaning; in other words, an expression is something that somebody can understand as referring to some other thing. I can understand that something is an expression (that something has some meaning) and yet I can be unable to decipher such meaning. For example I can consider a Chinese ideogram knowing that it is an expression but being unable to attach any meaning to it. In that case I am considering or mentioning that expression, but I am not effectively **using** it. A **meaningful** expression is an expression which is effectively used (to which a specific meaning is attached). All the expressions that appear in the essays are meaningful expression in this sense: all of them are used (and not just mentioned) by their authors.

A meaningful expression always refers (albeit in an implicit manner) to some subjects who understand it. From a social point of view (with reference to a given social group) an expression has a social meaning when at least one of the subjects belonging to the reference group somewhat understands that expression. Hence, the (social) meaning of an expression depends on the reference group that we are considering (the meaning of the word 'job' is not the same in Whitehall as in Soweto). Obviously, the reference group which constitutes the backcloth of (social) meaning in this research is the set of students who authored the essays.

As all the expressions in the texts are effectively used (and not just mentioned), the starting presupposition of the analysis will be that all those expressions have a meaning, at least for their authors. But from an operational point of view this analysis will consider as an individual (meaningful) expression any string of text that carries a minimally definite meaning, detectable by the researcher. From that perspective the smallest, atomic, expressions are words. But larger strings of text, like phrases, clauses, sentences, groups of sentences and whole essays may also be considered as expressions of a molecular kind. The criterium that allow us to consider all those strings of texts as individual expressions is the same: effective use; any effectively used word has some meaning, and therefore is an (individual) expression. Similarly, every effectively used phrase, sentence, etc., has some meaning, and therefore is an (individual) expression as well.

4.7.3.2. Identification of significant words.

I shall examine first the problems involved in the determination of the meaning of individual words. Not all words are equally significant from the point of view of conceptual meaning (J. Lyons, 1977:3-7; 49-55; 167-216)²⁴. There are two basic kinds of words: words which refer to an extra-linguistic reality (categorematic), and words which represent a purely linguistic relationship (sincategorematic). Categorematic words are mainly nouns, verbs, and adverbs. An example of sincategorematic words are the conjunctions which link sentences through an interpretation of the subject declarative attitude, —concessive, adversative, etc. The subject's declarative attitude can be expressed not only through sincategorematic terms but also

morphologically by means of the use of the appropriate verbal tense and mood. A grammatical analysis of these matters may be highly revealing. However I am interested in the conceptual content of the texts, and this content is embodied in the categorematic words. Consequently, in this analysis, sincategorematic words will be discarded as autonomous meaningful units.

The categorematic terms, on which I shall focus may be classified according to the role that they play in the sentence. There are categorematic terms whose meaning refers to very general relationship between any kind of objects, they are the prepositions. As they have this very general character and in spite of the fact that an analysis of them may clarify important aspects of the cognitive style of the reference individuals, I shall not consider them as autonomous meaningful units. The meaning of adverbs is not as general as that of the prepositions. Nevertheless, in a sense adverbs lack independent meaning and for this reason they will not be considered as meaningful autonomous units either.

There are three kind of categorematic words left: substantives (which would include articles and pronouns), adjectives and verbs. Clearly they have some sort of autonomous, extralinguistic meaning, and therefore they are the best candidates to be considered as the basic units in a process of conceptual content analysis. However the meaning of these words can be more or less generic. Verbs such as 'to go', adjectives such as 'independent', substantives such as 'thing' are very general (they can be used to express very different realities which have no relation between them). Their specific meanings depend on the context. Besides, the words that have a more general conceptual content are more widely used, and because of that their use has less contrasting power from a social point of view: everybody uses the word and the generic concept 'thing'. Therefore not all nouns and verbs can be effectively used as autonomous units of meaning. Those which are too generic should be discarded for that purpose. At the other end of the spectrum, the words that carry too specific a meaning (for instance, some proper names) often have a use which is very narrow (frequently they are used by just one individual in the group of reference). For that reason they also lack in contrasting power, and consequently they will not be considered as autonomous units of meaning either.

In sum, the words that the researcher must select initially as autonomous meaningful units are nouns and verbs that refer to concepts which are neither too generic, nor too restrictive (for instance 'disco', 'fiancee', 'university', 'studying' ...).

4.7.3.3 Identification of significant clauses.

The selection of these words provides a first view of the meaning structure of the texts. However the meaning of individual words often becomes specified and clarified by the clause to which those words belong. For instance, the word 'maths.' is further specified in sentences such as 'I love maths', or in the correspondent clause 'to love maths'. Clauses constitute molecular units of meaning within which the separate meanings of the component words interact and produce a specific total meaning. Because of that the initial selection of words should be further specified by a second selection made of by the clauses to which those words belong. In this second selection (of clauses) some words that were initially disregarded will appear, as components of clauses nucleated around words belonging to the first selection (of words). For instance, if the word 'disco' has being included in the first (word) selection, the second (clause) selection will include the clause 'going to the disco', one of which components is the verb 'to go' that was not included in the first (word) selection. Therefore as the analysis progresses from the word level to the clause level, words which were initially ignored are rescued and integrated into molecular units of meaning. Obviously the selected clauses have as implicit subject the author of the text, and in this sense they are equivalent to sentences.

The clauses selected from each text compose an individual's list, and the whole of those lists make up a general list of clauses.

4.7.3.4. The relationship between concepts and attitudes.

Each individual clause relates (at least) a verb to (at least) an object, now this combination verb-object not only expresses an objective concept but also a subjective attitude. Therefore it is at the clause level where conceptual content analysis and attitudinal content analysis interlock in a single reality.

For instance "not liking to be taken to an old people's home" (a clause corresponding to the literal sentence "I don't like to be taken to an old people's home"), is a clause which combines a conceptual content ("to be taken to an old people's home") and an attitude expressed by the author of the text ("not liking... "). In fact, concepts and attitudes are not separate things, but two aspects of a single expressive act. An attitude is intentionally directed towards an object which is perceived and expressed by means of a concept; and the use of a concept automatically relates a certain attitude to it (this attitude can be rather detached from an emotional point of view, as when one says "suppose that... " or "in fact..." ; these are hypothetical or declarative attitudes.

When student number 61 says "I want to be a doctor and specialize as a gynaecologist" (the corresponding clause would be "wanting to be a doctor and specialize as a gynaecologist"), she is not only using the concepts 'doctor' and 'gynaecologist', but at the same time she is relating to those concepts through an attitude ("to want to be"). Consequently I shall not consider attitudes and concepts separately in my analysis, but as two aspects of a single reality (two aspects that interlock at the clause level). Properly speaking each of those single realities should be called an **attitudinal concept** —for instance, "to want to be a doctor"—, but for the sake of brevity I shall simply call them **concepts**. Henceforth, when I speak about 'concepts' I am referring to 'attitudinal concepts'. (In reality, clauses are not concepts but expressions of them; they are, so to speak, 'names' of concepts. However to introduce that distinction would be quite cumbersome, and for this reason I shall directly consider the refer clauses as concepts in the indicated sense).

4.7.3.5. Constructing a list of concepts from a list of clauses.

I have tried to show that clauses express (attitudinal) concepts. However, some clauses do not include in an explicit manner the attitudinal verb. To be able to 'read' comfortably the clauses as concepts, the researcher has to complete them, adding the missing elements. For instance, the sentence "I see myself helping my father" and the corresponding clause "to see oneself helping his/her father" are lacking in any explicit attitudinal verb. But the context clearly indicates that the attitude that the author attaches to the sentence is a positive one ("I'm prepared and expect to help my father").

Consequently, many of the selected clauses that compose the individuals' and general lists have to be worded in a new form in order to make their attitudinal components explicit. When the attitudinal component of a clause has been reformulated it will be written between squared brackets.

An analysis along this line of the one hundred essays, produce a list of clauses representing concepts with nearly two thousand entries. I call this list **the general list of concepts**.

4.7.4. From concepts to categories.

The general list of concepts has a variegated aspect. However many concepts that appear in the list may be considered as different versions of the same basic conceptual content. For example the concepts "wife" and "spouse" (in Spanish 'mujer' and 'esposa') are terms which refer to slightly different concepts; but those two concepts share, to a large extent, a common core. In order to make explicit the common conceptual core underlying similar concepts a process of interpretation is required. This process in which the researcher should use her linguistic and sociological insight carefully, seeks the grouping of homologous concepts belonging to the same 'semantic family'. For instance '(wanting) to help (economically) own children' and 'not liking to see own children lacking in anything' are obviously homologous concepts.

This process of conceptual homologation can be done by the researcher herself, who may use capabilities of linguistic and social intuition, or it can be done by any other social agent who belongs to the reference culture. In fact, these social agents might be a sample of the very reference subjects, in which case (part of) these subjects would act as interpreters of their own texts. This technique of self-interpretation would provide the research process with a reflexive basis²⁵. However to implement that technique of self-interpretation would pose further methodological problems, adding a great deal of complexity to this research. Therefore I have opted for a more traditional technique: I have done the interpretation by myself, trying to work as if I were in the students' shoes. In any case the process of interpretation that I call '**conceptual homologation**' is a reflexive process²⁶:

some social subjects produce a discourse that is homologated by other social subjects who can be some of the former, but in any case belong to the same reference culture or are familiar with it.

Key words can connect homologous concepts, which are expressed by different clauses. For example the word 'children' is one of those key words, and connects clauses such as 'wanting to take care of own children' and 'not wanting to see own children lacking of anything'. In this way the general concept list interacts with the initial word list. The analogous association of whichever two concepts with one or several other concepts in the texts is an evident indication of conceptual similitude. The conceptual homologation process must pay attention to the connections that the concepts show in the texts, in order to give each concept as much information of its context as possible. In fact

"The chosen unity of analysis depends on the linguistic configuration in which the relevant content is included" (R. Mayntz, 1975, 204).

The method of analysis that I am proposing is not analytic in the usual sense of the term. It is a **nonreductive** method of analysis. It involves two operations: first, a set of meaning units will be selected from the texts. These units must have an autonomous, partially context-free meaning. Second, the specification of the meaning of those units has to be redefined by looking at their contexts: a given unit can be located in different contexts and the interplay between those contexts must redefine the meaning of such a unit. In order to do that, we will place the single units (key words) opposite to the complex units (conceptual clauses) from which they are a part. As a consequence of this the list of general concepts becomes structured on two levels. Thus, the process of conceptual homologation works not only with the isolated meanings of the conceptual clauses but also, through the key words, with the concurrent meaning of different conceptual clauses. In other words by means of this method, specific concepts reciprocally define their meanings through the interplay between the diverse concepts in which they appear.

The use of this type of non reductive analysis is justified on both theoretical and practical grounds. As I said before, a self-perception system is

made up not only of the cognitive structure of the individual, but also of her attitudinal, volitive, emotional, affective structures. A reductive analysis which would consider concepts from a context-free point of view, would offer an approximate image of the purely cognitive aspect of an individual, an image of the things she knows. But it will never be suitable to mirror the attitudinal aspects of her self-perception. The use of a reductive type of analysis would not enable the researcher to illuminate which is the volitive, affective, emotional dynamic in which the subject locates and makes sense of the things she is talking about. In order to capture these aspects it is necessary to have the ability to refer to the diverse context of each of the units of the analysis at any moment. The homologation process is not only an assimilation but a structural organization of concepts. In fact, concept homologation is produced by that structural organization.

The examination of the general list of concepts and key words, allows the researcher to group families of similar concepts. Each of these families is called a **category**. Hence, a category is a general concept which underlies a family of specific concepts (by means of particular clauses). For instance "I see myself living in an old people's home" and "When I'm old my children will take care of me" are sentences whose underlying particular concepts which may be assimilated under the **category** "(contemplates) negative/dependent old age".

This category is opposite to the category "(contemplates) positive/independent old age", which is exemplified by expressions such as: "When I'm old and retired, I'll travel a lot and enjoy all things I couldn't when I was working" or "When I'm an old women I shall travel a lot all around the world". This grouping of concepts into categories produces a general list of conceptual categories (categories for short). My first list had a total number of 81 categories and the number of categories used by each student ranged from four to twenty four.

This process of conceptual assimilation that I call 'homologation', has been defined by G.A. Miller, who uses also the word 'category', in the following terms:

"In order to handle big collections of verbal material... it seems indispensable to reduce the, variety of alternatives... this can be done uniting in a single category a wide variety of structures of different words" (1951: 95).

The categories used by each subject are specified in an individual list. These individual lists are the final outcome of the first stage of my analysis, the stage of content analysis, and provide the data for the second stage of this analysis. The idea is, in the first place, to use those data as the input for a Q-analysis (connectivity analysis). The connectivity or Q-analytic connection between individuals consists in the relationships of conceptual affinity that each individual maintains with the others, by means of the use of a common repertoire of categories. The strength of the connection between any two individuals is given by the number of categories that they share. In a similar way the connectivity between categories consists in the relationships of social affinity that each category maintains with the others on the basis of the fact that they are used by the same individuals. The strength of the connection between any two categories is given by the number of individuals who share them.

I have not however done this connectivity analysis in the way in which Q-analysis contemplates it. The reason for this is that if I had attempted an orthodox Q-analysis I would have obtained data unsuitable to be treated by means of the mathematical technique (multidimensional scaling or MDS) which is the instrument of the sociosemantic analysis that constitutes the second stage of my analysis. An orthodox Q-analysis would have generated some zero value connections, as well as some 'full' connections; these values are unsuitable as proximity values, which are the input to any multidimensional scaling.

Therefore as I shall explain in the next chapter, instead of a standard Q-analysis I have used a similarity coefficient (JACCARD) to compute the strength of the connections between concepts and between individuals. The similarity values produced by computing that coefficient are the proximity values which constitute the input to the MDS. The output of the MDS are two kind of plots which will be called sociosemantic plots. One of them represents

sociodistances between categories, and the other semantic or communicational distances between individuals. Those plots should be interpreted in order to find relevant configurations in them. Hopefully, these configurations may correspond to distinct self-perception models and self-perception social groups.

The determination of those sociosemantic configurations lends an 'objective' basis to the third stage of the research, the full interpretation of the texts by the researcher. This objective basis, as already indicated, provides heuristic hints for the researcher and at the same time controls and corroborates her interpretative intuition. Thus, intuition plays a key role at the beginning (determination of concepts and abstraction of categories) as well as the end (full hermeneutic analysis) of the whole process, whereas the sociosemantic stage provides the kind of information which transforms the researchers' spontaneous insight into a tutored insight.

4.8. Examples of conceptual homologation.

I shall translate into English some essays in order to use them as examples of the content analysis that I have carried out. In these examples I shall make explicit the process of conceptual homologation that I have followed step by step in each essay. With the 116 essays in Spanish, I shall try to keep the style and the tone of the original in the translation, even when that style is grammatically incorrect.

Example 1 is an essay written by a 13 years old boy from Picasso School. His father is employed in an upholstery shop and his mother is a housewife. Both parents have attended only primary school.

"When I leave school I'll probably learn the upholstery trade by helping my dad and going to evening classes in design. At about 9.00 pm, when I came out of class I'll go down the disco and pick up a girl, that is if I haven't got one already. Once I finish the design classes I'll carry on working with my dad while I save the money to get my own upholstery business in a good location. Everybody's going into computers now, so upholstery's a better

bet. I'll still go to discos with my girl friend. When I'm 18 I'll get my driving license and when I got my own shop and my own car I'll get married.

When, I'm an adult I'm going to enjoy myself and enjoy my job. I'll work hard, but on Sundays I'll go out to the country, the cinema, the disco or somewhere. If I can, I let my kids to do what they want as long as they don't get into drugs or booze. They have to watch out for themselves and get the best out of life they can. Maybe I'll have a son who's an upholsterer and if I have all girls they'll have to watch out for themselves too. If I live to be old, I'll try to help my kids if I can and no be a nuisance. I wouldn't like to go into an old people's home but it depends how things go. If I win the pools, I'll only keep a bit of the money for myself, I'll give most of it to my kids and some to poor people".

A first list (**list of words**) selects the words that seem to carry significant meaning. This list is:

father
 learning
 upholstery
 (design) school
 disco
 girl(friend)
 (design) courses
 to save
 money
 (upholstery) business
 computers
 girlfriend [fiancee]
 (driving) license
 car
 (to) marry
 <Adult>
 job
 (to) work
 country(side)
 cinema
 Sunday
 kids
 drugs

booze
 sons
 upholsterer
 girls [daughters]
 <old>
 nuisance
 (old people's) home
 pools
 poor (people).

This list includes not only single words but also units (nouns or verbs), that although composed by several words function as a single word. For instance 'old people's home' and 'driving license'. Three of the words are enclosed in brackets allude to concepts present in the topic of the essay. Because of that they cannot be considered as concepts spontaneously used by the student.

It should be noticed that some of those words are used several times by the author: 'upholstery/upholsterer' (3 times), 'kids' (3 times), '(to) work/working', (2 times), 'disco/s' (3 times), 'dad' (2 times), etc. Obviously the number of times that an author uses a particular word, somehow indicates the importance that this author attaches to that word. In the case of this essay, the author clearly views as essential aspects of his life things such as his working future as an upholsterer, the relationship with his father, his role as a parent, etc. A conceptual content analysis might take into account the number of occurrences of specific conceptual contents in the text. However I have chosen not to consider this aspect, consequently the presence of a concept in a text will not be weighted according to the number of occurrences of such concept in that text.

The corresponding **list of concepts** (conceptual clauses) is this:

(contemplates) to help (own) father (learning at he same time upholstery).
 " to go to a design school
 " to go to the disco (after school)
 " to pick up a girl(friend)

- (contemplates) to finish the design classes
- " to carry on working (with own father)
 - " to save the money (to get own upholstery business)
- (considers) upholstery to be a better bet
- (avoids) to study computers
- (contemplates) to continue going to the disco (with girlfriend [fiancee]).
- " to have a [fiancee]
 - " to get a driving license (when 18 years old)
 - " to get own shop
 - " to get own car
 - " to marry
 - " to enjoy life
 - " to enjoy job
 - " to work hard
 - " to go out to the country
 - " to go to the cinema
 - " (to enjoy himself) on Sunday
 - " (to have) kids
- (considers) (to let) kids (to do what they want)
- (fears)(children) to get into drugs or booze
- (hopes) (children) to watch out (and get the best out of life they can)
- " (to have) sons
 - " one of his sons (to become) an upholsterer
- (contemplates)(to have) girls [daughters] (in second place)
- (hopes) girls [daughters] to watch out (for themselves too)
- (doubts) to live to be old
- (fears) to be a nuisance (when old)
- (wants) to help (own) kids (when old)
- (fears/contemplates) to go to an old people's home
- (fantasizes) to win the pools
- (contemplates) to give most of (the money won in the pools to own) kids
- " to give money (won in the pools) to poor people.

In these lists, words enclosed in squared brackets indicate translations of ambiguous words '(girls [daughters])'. Attitudes are indicated by verbs between brackets in front of the clauses '(contemplates)'. Frequently, the

understanding of the clause requires to making explicit its context; this context is indicated between round brackets. For instance, 'to go down the disco (after school)'. Obviously these rules cannot be applied too strictly. There are items particularly difficult to represent according to them. For example, when the main clause has some other clause embedded within. In those cases, some degree of change in the literality of the clauses seems admissible (e.g., the clause "(contemplates) to give most of (the money won in the pools to own) kids").

In this translation from literal text to conceptual clauses a considerable amount of information is lost. Clauses and sentences modulate their meaning as a result of their contextual relations. For instance, a highly revealing sentence such as 'if I win the pools, I'll only keep a bit of the money for myself, I'll give most of it to my kids and some to poor people', gets disarticulated when it is decomposed into several clauses. A substantial part of the sentence's meaning, which arises from the synergy that exists between its parts, is lost in the process of translation. However, as the process of analysis is nonreductive (as the researcher can and should go back to the text in the process of conceptual homologation, in order to refine and classify the meanings of specific concepts to generate categories) this loss of information is only apparent. In reality the process of extracting the conceptual clauses in each text extraordinarily enhances the perspicacity of the researcher. Producing the conceptual clauses forces the researcher to read each text in depth, capturing its semantic structure.

Example 2 is an essay written by a 13 years old girl from Herrera School. Her father is a teacher and her mother a psychologist.

"Next year I'm going to go to the Institute (6th Form College). After that I'll go to university. I'll do a degree in Sciences because I love Maths but I'd like to write books for teenagers' as well. I reckon I'd like to share a flat with my friends. Later on if I fancy living just with one boy, then I will. I don't reckon I ever get married but maybe I change my mind when I'm older. If my friends want, I'll live with them till I die (if I don't get fed up of them). As I said before I like maths a lot, but apart from that I don't know what career to choose (I don't

know what job I could choose that I'd enjoy and that's related to maths.) I don't like physics much, well, I like it when I understand what I'm doing, but the fact is that I don't understand it properly. I'll really like to be a writer as well, but I don't know. I'll really like to be an actress, but I don't think I'd do very well at that. No chance! If I could I'll be an actress, paint pictures in my spare time (if I'll have any) and write stories for teenagers at night. I'll like to have a lot of pets too (apart from my friends, that is).

When I'm an adult I'll carry on with the same career (most probably I won't get married but if I do I'd like to carry on with my own job, I don't fancy anyone else supporting me). I'll like to travel a lot, and go all over the world, but not on my own.

I wouldn't like to be old, but when I am, I won't be like old women now. Oh! I forgot to say that I really like music (I could spend all day listening to music), (doesn't matter what sort).

I'll live with someone right up to when I'm old, I wouldn't want to live alone for any reason. I'd like to die happy".

The corresponding list of words is:

'Institute' (6th form College)

University

degree (in Science)

maths

to write

(shared) flat

friends

boy(friend)

(to) marry

(to) die

career

job

physics

writer
 actress
 (to) paint
 (spare) time
 pets
 (to be) supported
 (to) travel
 world
 (old) women
 music
 happy

The list of concepts is:

(contemplates) to go to the 'Institute'
 " to go to University
 " to do a degree in Science
 loves maths
 (fantasizes) to write (books for teenagers)
 (would) like to share a flat (with friends)
 (contemplates) to live only with just one boy(friend)
 (contemplates/doubts) never to marry
 (contemplates) to live with friends till death
 likes maths a lot
 (contemplates) to study maths
 (doubts) which career to choose
 (doubts) which kind of job to choose
 (wants) a job that (would enjoy) (related to maths)
 doesn't like physics much
 likes to be a writer
 likes/(doubts) very much to be un actress
 (contemplates) painting pictures (in her spare time)
 (would) like to have a lots of pets
 would like to carry on with own job (if married)
 doesn't like to be supported by anyone

would like to travel a lot

" like go all over the world

doesn't like to be old

" want to be like old women now (when old)

likes music (doesn't matter what sort)

(contemplates) to live with someone right up to when she is old

doesn't want to live alone

would like to die happy

Example 3 is an essay written by a 13 years old girl from Cortijo School. Her father is a cleaner and her mother is a housewife. Both attended only Primary School.

"When I leave school I'll go out to work and I'll study Law or Medicine because most of all I'll like to follow one of those careers, or both of them if possible.

As I said, while I'm studying I could see myself looking after children or working in a nursery because I really love children a lot even though sometimes they can be a bit of a nuisance. Well all kids are, I was myself when I was little, but I don't mind.

I can see myself working in one of the two careers that I choose, married to a really nice man and with three children. We'll have a big house, where I can have my office or surgery, so that I can see to my children and my home at the same time as any clients. As I'll be older by then, I'll get a young girl in as a nanny and to help around the house.

When I'm an old woman I can imagine myself in a big house with my husband, my children and loads of grandchildren. I'll play with them and take them for walks. At lunch time we'll all sit together round a big table. The parents, the grandparents and the grandchildren.

I wouldn't like to see my grandchildren go without if I have any, or my children either. If my husband and I don't have any children, our house will seem really sad because there's nothing nicer than having kids around. I really hope that doesn't happen".

The list of words is:

to work
 (to) study
 Law
 Medicine
 careers
 nursery
 children
 nuisance
 married
 nice man
 three (children)
 (big) house
 office
 surgery
 home
 clients
 nanny
 to help (in the house chores)
 husband
 grandchildren
 (to go) without

The list of concepts is:

(contemplates) working and studying
 " studying Law or Medicine
 would like to follow one of those careers (Law or Medicine)
 (contemplates) working in a nursery (while studying)
 " to look after children
 she loves (children)
 (considers) children a bit of a nuisance
 " to work in one of the two careers (Law or Medicine)
 (contemplates) to marry to a really nice man

(contemplates) (to have) three children
 " (to have) a big house (having office or surgery in it)
 " to see to own children, home and clients at the same time
 " " " clients at home
 would like (to have) a nanny (to help her with the house chores)
 (contemplates) (living) in a big house with husband (when old)
 " (to be) surrounded by children and loads of grand children
 (when old)
 " (to be) all together, parents children and grandchildren
 wouldn't like to see grand children and children to go without
 (fears) to have no children
 (considers) nothing nicer than having kids around

When the researcher compares the list of the three essays, some contrasts stand out. For example, the list of words of Essay 1 contain a lot of key words (father, disco, money, fiancée, driving license, car, sons, children,...) which do not appear in Essay 2, and vice versa (university, to graduate, to write, shared flat, career, spare time, to travel). At first sight they seem to mirror very different, even incompatible self-perception systems. The researcher should use those contrasts as an Ariadne's thread in the process of homologation, assuming the motto '(socio)meaning is contrast (between social subjects)'.

Progressively —and frequently through their connections via key words— some conceptual contents show their links with other similar conceptual contents. For instance "(wants) to help (own) children (when old)", used in Essay 1, has a semantic content which is very similar to "(contemplates) to give most of the money won in the pools to own children", also used in Essay 1, and both specific concepts have a semantic content very similar to "wouldn't like to see grandchildren and children lacking in anything", used in Essay 3.

This grouping of similar specific concepts into families generates the conceptual categories that are going to provide the data for the next stage of the analysis. There is no rule to determine a priori how many categories should be produced. Two similar categories may be combined into a more general

one, and a given category may split into two different ones. The very process of homologation stabilizes a particular set of categories which combines a minimum loss of textual information and a maximum gain of inter-textual connectivity. In addition to the categories directly generated from families of conceptual clauses, the researcher may add general attitudinal categories, which refer to volitive, emotional or affective attitudes that pervade the whole essay. I am referring to attitudes such as 'optimistic', 'self-confident', or 'unambitious'. No student explicitly says in the texts that she or he is optimistic, ambitious or self-confident, but there are essays where one of these attitudes —or others like 'lack of confidence' or 'idealism'— clearly are the backcloth in front of which the explicit concepts appear.

I shall formulate each category using as few words as possible. The specific attitudinal aspect of each particular concept will be lost in the process, as well as the specific 'objective' content of each concept. For instance, the objective conceptual content 'to marry' can have different attitudes attached to it, either positive ('contemplates', 'wants', 'supposes'...) or negative ('rejects', 'does not like', 'doubts', ...). Obviously all these attitudinal nuances must be reduced. I shall consider two basic attitudes attached to each concept, positive and negative. Frequently, the positive attitude will not be made explicit. For instance, the category 'marriage' includes all sort of positive attitudes towards marriage. The negative attitude towards a given conceptual content will be expressed by means of a negative adverb or using a specific attitudinal verb, for instance, 'not a housewife' or 'hesitates to have children'.

Categories in Essay 1

(contemplates) to help (own) father	}	<i>Family Ties</i>
(contemplates) to carry on working with father		
(hopes) one of his son (to become) an upholsterer		
(wants) to help (own) kids (when) old		
(contemplates) to give money... to own kids		
(contemplates) to go to a design school	}	<i>Vocational Studies</i>
(considers) upholstery to be a better bet		
(avoids) to study computers		

- (contemplates) to go down the disco
 (contemplates) to go out to the country
 (contemplates) to go to the cinema
 (contemplates) (to enjoy) himself on Sundays
 (contemplates) (to enjoy) life } *Fun*
- (contemplates) to pick up a girl(friend)
 (contemplates) going down the disco with girlfriend ..
 (contemplates) to have a [fiancee] } *Fiancee*
- (contemplates) to get own shop
 (contemplates) to get a driving license
 (contemplates) to have own car
 (contemplates) work hard } *Non
Professional
Job*
- (contemplates) to save money } *Money
(Through
Work)*
- (contemplates) to marry } *Marriage*
- (contemplates) (to have) kids
 (hopes) to have sons
 (contemplates) (to have) girls [daughters] in second
 place } *Wants
Children*
- (considers) (to let) kids (to do what they want)
 (fears) (children) to get into drugs or booze
 (hopes) (children) to watch out
 (hopes) girls [daughters] to watch out too
 (hopes) one of sons upholsterer
 (wants) to help (own) children (when old)
 (contemplates) to give most of (the money won in the
 pools too own) kids } *Care Of
Own
Children*
- (fears/contemplates) to go to an old people's home ... } *Dependent
Old Age*
- (fears) to be a nuisance (when old)
 (doubts) to live to be old } *Negative
Old Age*

(fantasizes) to win the pools	}	<i>Money (Through chance)</i>
(contemplates) to give money (won in the pools) to poor people		

Categories in Essay 2

(contemplates) to go to the 'Institute'	}	<i>Continue Studies</i>
(contemplates) to go to University		
(contemplates) to graduate in Sciences	}	<i>University Career (Specified)</i>
likes very much maths		
(doubts) which career to choose		
(contemplates) to study maths	}	<i>To Study</i>
(fantasizes) to write (books for teenagers)		
likes/(doubts) very much to be an actress	}	<i>Fantasy</i>
(would) like to share a flat with friends		
(would) like to share a flat with friends	}	<i>Shared Flat</i>
(contemplates) to live with a boy (friend)		
(contemplates) to live with someone right up to when she is old	}	<i>Living Together Unmarried</i>
(contemplates/doubts) never marry		
(contemplates/doubts) never marry	}	<i>Hesitates about marriage</i>
(contemplates) to have a lot of friends		
(contemplates) to have a lot of friends	}	<i>Friends</i>
(contemplates) to have a lot of friends		

(doubts) which kind of job to choose	}	<i>Professional Job</i>
(wants) a job (to enjoy) related to maths		
(would) like to carry on with own job (if married)	}	<i>Independent</i>
doesn't like to be supported by anyone		
likes to be a writer	}	<i>Hobbies</i>
(contemplates) painting pictures (in her spare time) ...		
likes music (doesn't matter what sort)		
(would) like to have a lot of pets	}	<i>Pets</i>
would like to travel a lot	}	<i>Travel</i>
would like go all over the world		
doesn't want to be like old women now (when old) ..	}	<i>Positive Old Age</i>
would like to die happy		

Categories Essay 3

(contemplates) working and studying	}	<i>Continue Studies</i>
(contemplates) studyin Law or Medicine	}	<i>University Career (Specified)</i>
would like to follow one of those careers (Law or Medicine) ...		
(considers) to work in one of the two careers	}	<i>Professional Job</i>
(contemplates) to have a surgery or office		
(contemplates) to see clients at home		
(contemplates) to marry a really nice man	}	<i>Marriage</i>

(contemplates) having three children	}	<i>Wants Children</i>
(fears) to have no children		
(contemplates) to have a big house (having office and surgery in it	}	<i>Housework & Career</i>
(contemplates) to see clients at home		
would like (to have) a nanny top help with the house chores ..		
(contemplates) to see children, home and clientes at the same time	}	<i>Family & Job Fulfillment</i>
(contemplates) living in a big house when old	}	<i>House Important In Old Age</i>
(contemplates) living with husband when old	}	<i>Independent Old Age</i>
(contemplates) (to be) surrounded by children and grand children	}	<i>Family Ties In Old Age</i>
(contemplates) to be all together, parents, children and grandchildren		
wouldn't like to see children and grand children to go without	}	<i>Care Own Children</i>

In the first list there are redundant concepts, they will be considered only once. With those criteria on mind through several stages of language normalization and conceptual homologation we produced the second list. We can see below a sample of how this second list comes from the first one looking at the 3 examples. Further below is the complete second list with 81 concepts.

The first list of the whole sample (100 students) has about 2000 expressions. The second list is reduced to 81 conceptual expressions or categories. The 81 concepts list is the one that will be used to start the next stage of the analysis: the production of a matrix of binary data. We will

establish a relationship between each individual and all the 81 concepts one by one. Each individual is connected to those concepts she or he uses and also connected to other individuals through the shared concepts.

At this point one can wonder if instead of the long work of analyzing the essays it would not be easier just to do a questionnaire with the 81 questions and ask the students to answer it. In this respect I must say that the 81 items included in the list are produced by the very subjects of the research. The selection is the responsibility of the researcher, but operating upon information produced, as freely as possible, by the students. The 81 concepts are the result of what these particular groups of students wanted to write about, it does not apply for other students necessarily. If we prepare a questionnaire with those 81 items and pass it to different groups of students, we will force them to answer other people's questions, they will not show their own worries or interests.

The resultant 81 concepts list is the following one:

1. Second house
2. Unambitious
3. Hobbies
4. Housewife
5. Ambitious
6. Friends
7. Friends/fun
8. Pets
9. Care of own children
10. Self-confident
11. Adventurous
12. Sense of responsibility to parents
13. University career (specified)
14. University career (unspecified)
15. Dream house
16. House/home (unspecified)
17. Marriage
18. 2dn marriage
19. Hesitates about marriage
20. Social conscience
21. Wealth
22. Living together (unmarried)

23. Appearance/dress
24. Intellectual curiosity
25. Sports
26. Money (acquired through gambling)
27. Money (acquired through work)
28. Leisure
29. Sophistication of ideas
30. Wife at home
31. To continue studies
32. Study (career orientated)
33. Study for own sake
34. Lack of confidence
35. Fantasy
36. Vocational Studies
37. To make one's will
38. Wants children
39. Hesitates to have children
40. Idealism
41. Any study
42. Any job
43. Independent
44. Family ties
45. Social mobility
46. Living in the countryside
47. Not a housewife
48. Not to marry
49. Not to continue studies
50. No children
51. Fiance/fiancee
52. Optimism
53. Shared flat
54. Properties
55. Family fulfillment
56. Job fulfillment
57. Family & job fulfillment
58. Against conscription
59. Military service
60. Fear of unemployment
61. Work for family
62. Work (unspecified)
63. Working life depending on children
64. To leave work at marriage
65. Professional job

66. Non professional job
67. Housework & career
68. Divorce
69. University
70. Active old age
71. Continuing profession in old age
72. House important in old age
73. Dependent old age
74. Independent old age
75. Family ties in old age
76. Negative old age
77. Inactive old age
78. Positive old age
79. Peaceful old age
80. Travel
81. Willpower

4.9. Reduction and Assimilation

In fact, I started the next stage of the analysis with the list of the 81 concepts, but when using Multidimensional Scaling the distribution of the variables among the population must be between some limits in order to get the appropriate 'goodness-of-fit' (it will be explained in more detail in chapter five). For that reason some of the concepts were combined with others semantically close, and some others eliminated. The criteria of eliminating concepts was their low frequency. We left out the concepts 'second marriage', 'divorce', 'social conscience', 'against conscription', and 'military service', 'lack of confidence', and 'doesn't want children' because they have been used only by two, three or four individuals. Twenty five concepts remain the same as in the first list because they were assimilable with no other concept and used by a large number of students. The rest, 49, were assimilated or combined with others and reduced to 19. To do the assimilation we not only consider the expression of the list but the context of the essay in which that expression appears. For example, just by looking at the concepts it is not immediately evident why 'unambitious', '(to have) an unspecified home', and 'not continue studies' are together under the unique concept 'unambitious'. The whole meaning of the expressions is only understandable in its context: the essay. Following with our example the eight students who do not go on studying after

the compulsory period, it is because they find it boring, difficult, considered themselves not prepare for it, etc. Besides, their school records show that their lack of interest for the school come from long before. But if for example some one said something like she or he does not like to continue studies because she or he has better projects in life, and explains them, that student will never be included in that group. The other concept mentioned 'unspecified house' stands for expressions as 'I'll have a house', 'I'll be living in a flat' just as a fact, as a place of living, without any indication if she or he will buy or rent it or any detail about the house characteristics. The house is just a thing to have (here 'to have' has not necessarily the sense of property) when one leaves the parents' house. 'Unspecified house' is a category well differentiated from others like 'dream house', 'second house in the countryside' 'house with a garden (a luxury in Spain), a swimming pool, a bar along the swimming pool', which are included all three of them in the category 'properties'. The same criteria was follow to combine and reduce the other concepts as it can be seen

second house	}	properties
dream house		
wealth		
properties		
ambitious	}	ambitious
mobility		
willpower		
self-confident	}	self-confident
adventurous		
optimism		
sports	}	leisure/sports
leisure		
to continue studies	}	continue studies
any study		

any job work (unspecified)	}	work
active old age		
continue profession in old age independent in old age positive old age	}	positive/active old age
dependent in old age		
negative about old age		
not a housewife no marriage	}	not to marry
sense of responsibility to parents family ties		
working life depending on children housework and career	}	housework and career
university career (specified) university career (unspecified) study (career oriented) university		
housewife to leave work at marriage	}	housewife
to take care of own children my wife at home family fulfillment		
friends fun with friends	}	friends
intellectual curiosity study for own sake		
	}	intellectual interests

unambitious	}	unambitious
house/home (unspecified)		
not continue studies (unambitious)		
vocational studies	}	vocational career
non professional job		
hobbies	}	hobbies/pets
pets		

With these 19 combined categories and the 25 we kept from the 81 categories list we have the final list with 44 categories that will be used in the MDS, it is the following:

1. Marriage
2. Hesitates about marriage
3. Social conscience
4. Living together (unmarried)
5. Appearance/dress
6. Money (worked for)
7. Sophistication of ideas
8. Fantasy
9. To make one's will
10. Wants children
11. Hesitates to have children
12. Idealism
13. Independent
14. Living in the countryside
15. Fiance/fiancee
16. Shared flat
17. Job fulfillment
18. Family & job fulfillment
19. Fear of unemployment
20. Work to support the family
21. House important in old age
22. Family ties in old age
23. Inactive in old age
24. Peaceful old age
25. Travel
26. Properties

27. Ambitious.
28. Self-confident.
29. Leisure/sports
30. Continue studies
31. Work.
32. Professional career.
33. Positive/active old age.
34. Negative/dependent old age.
35. Not to marry.
36. Family ties.
37. Housework and career.
38. Housewife.
39. Family fulfillment.
40. Friends.
41. Intellectual interest.
42. Unambitious.
43. Vocational career.
44. Hobbies and pets.

In reality I reduced the list of 81 categories to a list of 46, the 44 categories above plus additional two categories:

45. Lack of confidence
46. Unspecified university career.

Both categories are excluded in the final plots for reasons to be explained in the next chapter.

NOTES TO CHAPTER 4

¹ Freud stresses the emotional aspect of these changes, whereas other authors such as J. Piaget and G.H. Mead mainly stress the cognitive and social aspects of those changes.

² See Piaget's concept of 'adaptation' which is based on the two concepts of 'assimilation' and 'accommodation'. Children must assimilate the external world to their inner categories, although that process produces the accommodation of those categories to the requirements of the external world.

"Piaget saw knowledge as providing 'self-regulating' symbolic structures, developed by processes of 'assimilation' and 'accommodation'... 'Assimilation' is the modification of perceptual inputs by existing knowledge-structures, while 'accommodation' is modification of the knowledge structures to adapt to the input". D.S. in *The Oxford Companion to the Mind*: 621-622.

³In September 1990 a new Education Act (LOGSE) was approved by the Spanish Parliament. It will be gradually introduced from 1992 to 2000. One of its innovations is the extension of the statutory period of schooling in two more years. Thus, in the coming future, Spanish students will be 16 years old when they confront decisions that until now they confronted at 14.

⁴ For a detailed exposition of the problems posed by the researcher's subjectivity and the 'reality reconstruction business' in social sciences see Schwartz and Jacobs (1979) chapter 6 "Reality Reconstruction: What's Wrong with it?": 106-131.

⁵ As a refutation to accusations put by some positivism about the subjectivism in qualitative social research Siedman says:..."few have questioned the inherent subjectivity of quantification which requires 'selection' of parameters and baseline data, the interpretation of findings, and the selection of facts and evidence. There is much to be gained by destroying the myth of objectivity since subjectivity is always intricately involved -but disallowed" (1977:415).

⁶Ibañez (1979) argues that "There is not such a thing as an innocent technique ... the researcher must be predisposed to reckon the effects produced by the technique he or she uses".

⁷ J. Ibañez was the introducer in Spain of the discussion group technique, first in market research and later from his chair as professor of Methods and Techniques of Social Research (1976-1992) in the first Spanish faculty of sociology. He had also worked at the beginning of his career in market research using quantitative techniques: "Within the distributive perspective, I have been importer of technology: I introduced in Spain the public-opinion poll—in parallel with Amando de Miguel" (J. Ibañez 1990:22). His academic work develops the epistemological foundations of qualitative techniques and at the same time connects what is known as critical sociology with many other fields of contemporary research, from Freud and Lacan to second order Cybernetics (See J. Ibañez, 1979; 1985; 1991).

⁸ "The **qualitative** interviewer (or 'moderator' in the jargon of the trade)" A. Hedges "Group Interviewing" 1985:77.

⁹ "People must be encouraged to chip in freely, and to talk to each other as well as to the moderator" (A. Hedges op. cit.: 81).

¹⁰ I use 'real-time' in the sense that it is used in computer sciences to denote a data-processing system in which a computer receives constantly changing data, and processes it sufficiently rapidly to be able to control the source of data.

¹¹ "The 'discussion group' demands, on the other hand, an open design and a participation of the researchers, as concrete beings, as **subjects in process**, in the process of research: in contrast to the abstract technology of the questionnaire, it (the discussion group) implies a concrete technology. Precisely the design is open because the researcher intervenes in the process of research as a subject in process: the data produced by the process of research are 'impressed' on the subject in process who undertakes the investigation, and hence they changing him". (Ibañez, 1979: 263).

¹² F. Steier, 1991: 7-8.

¹³ L. Bardin (1977); Coulthard, M. (1977); M.A.K. Halliday (1978); K. Krippendorff (1980); M. Stubbs (1983); G. Brown and G. Yule (1983), among many others.

¹⁴ "The concept does not acquire an independent and individual life unless it has found a linguistic wrapping". (Sapir, 1921: 24). (The pagination number corresponds to the Spanish edition of 1954).

¹⁵ "A methodology is not merely a technique ... but a profound way of approaching nature". W. Stephenson (1967:31).

¹⁶ "There are very few golden rules, and certainly no magic formulae for cutting through the Truth —if indeed there is any single monolithic truth, which is not typically the case. Human beings are complex, ambivalent, inconsistent creatures; and not even the brightest and best organized of us live in a sharp-edged world where we have consciously and consistently sorted out our attitudes and beliefs on all conceivable subjects. It is a mistake to assume that there is a pristine Platonic reality under the muddle of our public utterances to which really sharp research tools can cut unerringly through. Underneath the mess of language lies a mess of thought and a tangle of behaviour. If our research tools cannot recognize ambivalence and inconsistency as real and important they will not help us to a very profound understanding of human thought and behaviour". A. Hedges, op.cit: 85.

¹⁷ Krippendorff, Bourdieu, Bardin and Ibañez, amongst others have dealt with the problems posed by the relationship between the subjective intuition of the researcher and objectivity. Their positions will be fatherly examined in Chapter Five when dealing with the researcher's intuition problem.

¹⁸ "The notion that distinctions are drawn rather than given, that researchers participate in the creation of data rather than finding them, that data are informed by theory rather than

informing it, is an anathema only for objectivist who are blinded again seeing the social or psychological foundation of their own reality". Krippendorff, 1991: 120-121.

¹⁹ In theory at least, linguistic includes semantics; but the linguistic point of view predominantly attends to the more formal aspects of language: morphology and syntax.

²⁰ Bernstein (1971, 1973, 1975); Turner and Mohan (1970); Cook-Gumperz (1973).

²¹ D. Lawton, (1968); H. Rosen (1972); W. Lavob (1973).

²² The extra linguistic implications of linguistic communication are described by Bernstein (1959; 1964) and G. Bateson (1972:177-200).

²³ T. Winograd and F. Flores (1987:31-32) stress the fact that "language is action".

²⁴ The pages numbers correspond to the Spanish 1980 version.

²⁵ F. Steier, 1991: 165 et passim.

²⁶ Gergen and Gergen (1991); Krippendorff (1991); von Glaserfeld (1991).

Chapter 5.

Sociosemantic Analysis of the Data

5.1. The Concept of Sociosemantic Analysis.

In the light of research conducted by Atkin and other authors, as well as the perceptions of writers like Wittgenstein, I have developed a technique for my principal analytical tool I shall call **Sociosemantic Analysis**. By sociosemantic analysis I mean a method which allows us to define the semantic connectivities and similarities, as well as the lack of connectivities and similarities, within a given social group.

The sociosemantic method is neither intended to describe the concepts which we find present in a particular group (as sociolinguistics does), nor the quantitative strength of each of these concepts amongst the individuals of a given social group.

The purpose of the method is to allow us to describe the social and semantic connectivities between individuals in that group as exemplified by these concepts. Paraphrasing Wittgenstein ([1958], (1984): 30, 41, 43, etc.), the socio-meaning of a concept can be described as the communication relationship that the users of that concept can establish between each other through it. In social terms a concept exists as a network of potential interactions through the use of that concept between the individuals who possess it and therefore are potential users of it.

I shall introduce now a description of the steps followed in doing the sociosemantic analysis in order to show the relationships between the conceptual categories that were produced as a result of the content analysis of the texts. In the previous chapter I presented a general list of 46 conceptual

categories derived from the texts written by the sample of 100 pupils from the four schools. This will be the set of categories that I shall presuppose henceforth. Each individual of the sample is defined, in relation to that general set of categories, by the specific set of categories that he or she uses. I shall call these specific sets 'individual list' of categories. As I have already pointed out, these individual lists constitute the initial data of sociosemantic analysis.

In this chapter my aim is to show the concept of sociosemantic analysis at work, by using the data produced through the previous content analysis in order to exemplified that concept.

The mathematical procedures which implement the method of sociosemantic analysis have been derived from two sources:

1. Q-Analysis or the analysis of connectivities developed by Atkin and other authors.
2. Multidimensional Scaling as developed, amongst others, by Kruskal and Wish, Coxon, Jones, etc.

The combination of these two sorts of procedures is on the origin of the sociosemantic analysis. I shall introduce some fundamental assumptions underlying that method, because it will provide the basis for a more accurate understanding of the data derived from the essays, and will help the researcher with a tool adequate to describe the social and semantic relationships which are present in the group of students who are the subject of this research. What I will call the socio-semantic method hinges on a few basic ideas, a brief account of which will be given in the next paragraphs.

As the data derived from the essays show, individuals who share specific concepts can be considered as being socio-semantically connected: they have a similar social perception of reality and consequently are socially close (they are capable, in principle, of interacting strongly). In an analogous way, particular concepts can be considered as being socio-semantically connected through the individuals who possess those particular concepts and can use (produce and reproduce) them to communicate.

Logicians distinguish between the 'extension' of a concept and its 'intension'. The extension of a concept is the collection of objects to which this concept may be applied. The intension of a concept is the set of characteristics or properties defining that concept. This distinction between the extension and intension of a concept may be applied to the analysis of social meanings. These may also be viewed from two perspectives: extensional and intensional.

It seems convenient to coin some new terms capable of expressing the underlying ideas. The **socio-extension** of a concept would be the collection of individuals who possess (and consequently are potential users of) that concept. In contrast, the **socio-intension** of a concept would be the collection of concepts which are also possessed by the individuals having that concept.

The socio-extension of a concept points to the configuration of the network of social interactions which can be realized through that concept. Whereas the socio-intension of a concept points to the potential content of (the interactions enabled by) that network. This potential (semantic) content is precisely the modulation of any actual interaction through other (semantic) contents.

These concepts require some explanation: the interaction between individuals begins through at least one shared concept, but the development of that interaction requires other shared concepts. Consequently the intension of the concept which begins the interaction consists in the common presence of other concepts that would make it possible for this interaction to continue and succeed.

Thus, the sociosemantic method seeks to analyze the relationships (the connectivities) between individuals through concepts and between concepts through individuals. Once these connectivities have been established, the social and semantic configurations that they define have a relevance of their own, to some extent independent from the concrete concepts and the particular individuals involved. These configurations can be considered as abstract realities showing the communication structure, and consequently the structure of potential interactions within a social group.

As stated before, the idea of sociosemantic analysis is built on the concepts put forward by Atkin's Q-analysis. The sociosemantic method provides the conceptual connectivities of Q-analysis with a sociological interpretation in order to make them more appropriate for the analysis of social realities. Q-analysis is designed for the depiction of connectivities between a fairly small number of elements. When we have to deal with a large number of connected elements, the form of the representation that Q-analysis furnishes to describe the connectivities between those elements becomes impossible to visualize, because of its multidimensionality. The connections cannot be represented visually one by one because there are too many and they become blurred, so to speak. Hence we need another technique which would enable us to depict the referred connectivities more clearly.

It can be argued that Multidimensional Scaling (MDS as I will call it from now on) may be a technique suitable for that purpose. MDS can provide us with a way of depicting the connectivities in question clearly, by considering them as proximity measures which can be graphically represented as distances. Kruskal and Wish (1978: 10) have argued that

"the amount of communication and interaction between individuals, groups and other entities can be regarded as a measure of their proximity. An MDS analysis of such data provides a sociometric map in which greater distances reflect less interaction between the associate entities".

Forgas¹ has stressed the relevance of MDS as a tool of research, he advocates the use of MDS in social psychology for reasons that may also be applied to the field of sociology in general. I shall quote his words changing 'psychological' to 'sociological'. He argues that

"MDS main advantage is that it enables the investigator to quantify and describe extremely complex **sociological** phenomena which would not be accessible to quantitative analysis otherwise. In essence, this is accomplished by the application of powerful **mathematical** techniques such as **matrix algebra** and **euclidean geometry** to the understanding of **sociological** relationships. The central assumption underlying the

sociological use of MDS techniques is that sociological distance or similarity (between concepts, constructs, persons, traits, social episodes, national stereotypes, etc.) can be represented and analyzed in terms of euclidean distances, 'we have gained enormously in the techniques we have at our disposal for analyzing and interpreting sociological data. We can approach with impunity some areas about which we are quite ignorant, armed with methods of great precision and power' [Jackson, 1969: 228]".

Having pointed out above the necessity of supplementing Q-analysis with the technique of MDS, I shall now proceed to explaining how sociosemantic analysis relates and implements those two methodological elements. Starting with the data generated by the process of textual analysis, I have used the general and individual lists of categories (see chapter 4) to produce a two dimensional matrix, establishing the presence or absence of each category in each individual. The matrix is constructed with our two sets (categories and individuals), which represent, respectively the 44 categories as columns and the 100 individuals as rows. The resulting matrix contains a total of 4,400 values. These values allow us to produce two similarity coefficient matrices which relate individuals to individuals and categories to categories. The similarity coefficient that I have used for this purpose is JACARD. Both are triangular matrices, the first having 100 columns and 100 rows and the second 44 columns and 44 rows. The values of these two matrices are then interpreted as 'proximity values' in two separate processes of multidimensional scaling. The purpose of these two processes is to represent as well as possible each corresponding set of similarities as a set of distances. The possible mismatch between each set of similarities and the corresponding set of distances should be minimized. The function that measures that mismatch is called the STRESS-function:

"the stress is intended to be a measure of how well the configuration matches the data"(Kruskal J.B. 1964: 84). "Each stress value results from an iterative computational procedure, i.e., a procedure in which the configuration is modified step by step to bring it into closer agreement with the data" (Kruskal & Wish, 1978: 50).

The dimensionality chosen to analyze our set of data ('dimensionality' here means the number of coordinate axes of the configuration or, which is the same, the number of coordinate values used to define a point representing an object in the space of representation) should be the one which is most helpful in analyzing these data. With n objects present, $(n-1)$ dimensions are sufficient to **perfectly** represent the similarities between those objects. However the main reason for using MDS, is that we want to represent the similarities in a space of low dimensionality. It is often the case that the relations between objects, i.e., their similarities, can be satisfactorily represented in two dimensions. The more dimensions used to represent the similarities, the less clear the interpretation will be. So, in general, a low dimensionality should be chosen. After attempting to work with three dimensions with ALSCAL and ANACOR and in view of the difficulties which arose when trying to find a meaningful interpretation of the resulting configurations, I chose to work with two-dimensional scaling. Hence the result of the scaling that I shall consider is a configuration in two dimensions in which each item (categories for the first scaling, individuals for the second one) is represented by a point that has two coordinates. In this way the proximity between items can be directly visualized as distances between them. The resulting configurations may then be qualitatively interpreted.

The first similarity matrix (corresponding to similarities between categories), will be called the **sociosemantic similarity matrix of categories**; as indicated, it provides the proximity values —which may be conceived as values of social proximity between categories— for the first scaling. In the same way, the second similarity matrix (corresponding to similarities between individuals) will be called **sociosemantic similarity matrix of individuals**; as indicated, it provides the proximity values —which may be conceived as values of semantic proximity between individuals— for the second scaling. The values resulting from the first scaling are then interpreted as **social distances** between categories, and the values resulting from the second scaling are interpreted as **semantic distances** between individuals. Semantic similarities, proximities and distances are conceived, respectively, as indexes of **communicational** similarities, proximities and distances. It seems sensible to think that the possibility of communication depends on the conceptual similarity between the people who communicate. The configurations resulting

from each scaling can be presented in numerical form or as plots. The scaling of the sociosemantic similarity matrix of categories produces a plot which I will henceforth denote as **categories plot**, and the scaling of the sociosemantic matrix of individuals generates a plot which I will denote as **individuals plot**. The process of scaling may be refined by doing separate analyses, grouping the students according to their school, gender or social background. This refinement produces a whole set of plots (categories plots and individuals plots) each of which can be compared to the others in order to draw interpretative conclusions. When interpreting the configurations I will assume Borg and Guttman's point of view:

"...the only criterion would be plausibility. Thus, one would have to try various interpretations based on dimensions, clusters, regions, etc., and then decide which one or which combination of different approaches would make the most sense. "The blind empirical results of the computer cannot by themselves show a substantive law of formation; they give only dimensionality and distance" [Guttman, 1964, p.33]."²

The technique of multidimensional scaling has been used in social analysis by a number of authors, although still as Coxon says

"Sociology is missing important opportunities to use a family of MDS models that are uniquely well-suited to its data needs" (Coxon, A. 1982:2).

However I must point out, that I use MDS in a rather special manner. I use MDS as a tool in a particular stage of a process of sociosemantic analysis. Nevertheless, in my case the basic concepts and objectives were not produced beforehand, as is the case with the quoted authors. Coxon (1979), for instance, in his analyses of the social meaning of occupations, uses as input for the process of MDS matrixes which have as values an evaluation (according to a scale) of the similarity between pairs of concepts. This evaluation is done by subjects who answer a questionnaire. In this sort of analysis the individuals (who answer a questionnaire provided with a scale) directly generate similarity values ascribed to pairs of concepts. In a process of sociosemantic analysis the

individuals, do not evaluate concepts, they produce/use them. It is that use and more specifically, the connectivities revealed by it, which is the factor that generates the similarities between those concepts. Besides in a process of sociosemantic analysis the subjects are also objects of the analysis. This produces similarities not only between objects (concepts), but also between subjects (individuals).

The categories plots and the individuals plots are two faces of the same sociosemantic coin. They are conjugate realities and there is a deep symmetry between them. Now, plots are purely formal entities (they are just a configuration of points), and their interpretation requires us to give a material content to them. This can only be done by 'importing' information from the outside of the purely mathematical process which has generated those plots: the points must have a meaning. But this imported information required for interpreting the plots is qualitatively different in the case of categories plots from that in the case of individuals plots.

For categories plots such imported information is the meaning that the researcher attaches to the categories (that is to the names of the points). For individuals plots the imported information is what I will call the **social insight** of the researcher about the individuals also represented as points. That social insight or social intuition helps the researcher to consider the individuals plots from different points of view, filtering their configurations according to variables such as gender, social background, etc. I shall use the term 'semantic insight' as the application in the context of sociosemantic analysis of what some sociologists call 'researcher's intuition' (Bourdieu, 1977:16-85; Ibañez, 1979:320)

The external information required for the interpretation of the categories plots is basically the semantic insight of the researcher. This insight allows the researcher to find the "family resemblances" (Wittgenstein) which exist among the categories (Coxon, 1982: 116). These family resemblances define several groups of points in the plot. In this respect it is important to stress that those family resemblances can neither be arbitrarily imposed, nor mechanically inferred from the purely formal configuration of the plot. They cannot be arbitrarily imposed because the groups of points must include at

least a nucleus of contiguous points. They cannot be mechanically inferred because in general the boundaries between different groups of points are not clear cut; they overlap with each other to some extent. Hence, the researcher's semantic insight is essential in order to define the structure underlying each plot, but it is an insight constrained and restrained (in a sense 'controlled') by that very plot.

The use of the social insight of the investigator has been questioned by empiricists and structuralists, but some authors such as the above mentioned, defend it as the means to overcome the fragmentation of other analytical techniques (distributive techniques.)

"Chomsky has been accused of coming back to intuitionism, but outside of intuitionism only a taxonomic type of science is possible (as the one that, in the field of social sciences, is produced by distributive techniques)"(J. Ibañez, 1979: 327).

The insight of the researcher is central to the process of analysis, but this insight is not of a wild or spontaneous kind, it is based on the professional knowledge of the sociologist and it must fulfill the requirements (reliability and reproducibility) demanded by the scientific method. By means of her sociological insight, this researcher is able to give a coherent meaning to the data she is considering, by applying in the process all her scientific knowledge and all her experience of the field. This is a creative process and there are no written rules for it, but it must be produced as an outcome of its very creativity, its own standards of objectivity and validity (Krippendorff 1980:chap.13). Bourdieu refers to the concept of social intuition by means of the idea of **habitus**. This idea consists of the assumption by the sociologist of the principles of the theory of sociological knowledge in order to apply it (not in a mechanistic way) to the understanding of society. Bourdieu defends the use of social insight as a way to find the hidden analogies that the sociologist must detect in social phenomena, and as a means of epistemological control of social analysis. This is so because the social insight helps to rebuild the unity of the object of research from analytical atomization (Bourdieu, 1977:16, 85). Ibañez (1979:320) gives a full explanation about the place of intuition in the process of social analysis:

"The researcher faces a discourse which represents an enormous amount of data and he must reduce it to unity: there is no algorithm (as the ones used by computers) capable to produce that unity; only the human body is able to produce that unity (by means of an interpretation), but this intuition must be validated later. The sociologist cannot find, in any place or time, the a priori rules that may decide on his behalf how to proceed. These rules are produced in himself, as a subject in process, all through the research process. This poses two problems: one of a psychological and/or anthropological nature, how those rules appear in him (how he discovers them); other of a methodological and/or epistemological nature, how to go from the subjective evidence to the objective knowledge".

As stated before, the external information required to interpret the individuals plots is of a social nature. It consists in the a priori data that the researcher has concerning those individuals (gender, age, school, family background, etc). The projection of those a priori data onto the individuals plots may also generate meaningful configurations, and consequently it can lend an interpretative structure to those plots.

There is a third type of information which the researcher can use to illuminate the interpretation of both kinds of plots: the mutual information that each sort of plot can provide for the other. In fact the information that each kind of plot yields can be used to interpret the other plot, and vice versa. In that way the interpretation of a categories plot may enhance the interpretation of an individuals plot, and vice versa. Of course, this mutual interpretation is only possible after both kinds of plots have been interpreted by the use of semantic and social insight; but it considerably refines that previous interpretation.

Hence, the interpretation of the plots, using the method I have outlined, will be used as a heuristic tool as well as a corroborating reference to the full intuitive interpretation of the texts, which will be developed in the next chapter. As I have tentatively indicated in Chapter 4, the informative content of those texts is much higher than that of any set of data abstracted from them. However, the similarities which have been abstracted from the texts and their

sociosemantic analysis, on the one hand, help to reveal hidden relationships underlying the whole of the texts—in this sense, the sociosemantic analysis plays a heuristic role. On the other hand, the results of this analysis constitute a backcloth against which the researcher can corroborate or contrast her intuitive interpretation of the texts.

5.2. Mathematical processing of the data.

The object of the mathematical procedures that I have used when processing the data is to find an easy way to represent the sociosemantic similarities between concepts/individuals. An appropriate representation will be instrumental in a good interpretation of those similarities (or the lack of them) which are based, as said before, on the connectivities between concepts (categories) through individuals, and between individuals through concepts (categories).

The starting point for the mathematical processing of the data obtained through the analysis of the conceptual content of the texts, is the initial matrix which specifies the categories that are used by each individual, and the individuals who use each category. This matrix contains just binary values: '1' means that a particular individual uses a particular category, and '0' means that a particular individual does not use a particular category. On the basis of this set of binary values, it is possible to calculate similarity values, on the one hand, between each pair of categories, and on the other hand, between each pair of individuals.

To generate those similarity values I used the procedure PROXIMITIES provided by the package SPSSx. As the initial matrix only contains binary values I used the facilities provided by PROXIMITIES for binary data. These facilities include matching coefficients, among them the JACCARD similarity measure. Those coefficients act on a 2x2 contingency table, computed for each pair of items (in our case those items are either categories or individuals). Each of these contingency tables which are computed by PROXIMITIES, produces four values: 'a' (characteristics which are present in item 1 and in item 2 as well), 'b' (characteristics which are

present in item 1, and are absent in item 2), 'c' (characteristics which are absent in item 1 and are present in item 2), 'd' (characteristics which are absent in both item 1 and item 2).

The JACCARD similarity coefficient excludes joint absences (value 'd' in the contingency table) and ascribes equal weight to matches (joint presence, value 'a' in the contingency table) and non matches (value 'b' plus value 'c' in the contingency table). The formula of the JACCARD coefficient measure is

$$\text{JACCARD } (x, y) = \frac{a}{a + b + c}$$

It should be noted that value 'a' is identical to the Q-analytical connections between the two items composing the pair which similarity is being computed.

By applying this procedure two matrixes were obtained, one giving a JACCARD similarity measure for each pair of categories, and the other giving the same kind of similarity measure for each pair of the initial set of 116 individuals. My purpose was to use those two matrixes (the category similarity matrix and the individuals similarity matrix) as inputs to two corresponding processes of MDS.

In order to do this I attempted to use the procedure ALSCAL, but unfortunately this procedure (also available in SPSS) only operates with rather small data sets (a maximum of 100 cases or variables). Consequently I needed to reduce the 116 individuals to 100. The criterion which I followed for this reduction was to equalize each school group to 25 individuals (the original numbers ranged from 25 to 31), keeping the balance between girls and boys. Once having determined how many boys and girls I needed to take out of each group I chose the particular individuals to be excluded by means of a random procedure. With this new sample of 100 individuals and 46 concepts it was possible to obtain two JACCARD similarity matrices of a size acceptable for ALSCAL. This procedure finds distances between stimuli that represent the similarity values of matrix as well as possible (Kruskal and Wish, op. cit.: 50). These distances are defined by determining the coordinates of each stimulus in a multidimensional space. The output provided by ALSCAL is both a list of

those stimulus coordinates and a plot (a configuration of points each of which represents a particular stimulus). A two dimensional scaling was produced for each matrix and the result was two different configuration of points (figures 1 and 2), a plot of categories and a plot of individuals. Each of these configurations locates points which represent individual items (respectively, categories and individuals) on a plane. In these configurations the set of points is located in such a way that their mutual distances represent the similarities between them as well as possible (i.e., in a such a manner that the stress is as low as possible). Small distances between any two points represent that there is a strong similarity between them; and large distances between any pair of points represent a weak similarity between them. In this way the thousands of similarity values required to express the similarities between the items in question, are represented as geometric distances between these items. This is a form of representation much easier to grasp intuitively than the similarity values themselves. The whole point of MDS is to make a large number of abstract relations between objects intuitively accessible to us. In fact, the number of similarity relations is quite large even for fairly small numbers of objects because each object is related to all the other objects. Because of this large number of relations the structure of these relations is hidden from our insight, just like the jumbled pieces of a huge puzzle. MDS geometrically represents these relations, as relative locations between the objects. Thus the relations between these objects may be inferred, by simply looking at their relative locations.

An initial attempt to use a set of 81 categories (see appendix 1), and the referred set of 100 individuals, to make a two dimensional MDS by means of ALSCAL did not succeed. The reason for this was that apparently a set of 81 categories in a sample such as ours in which the connections between items are rather weak, produces an 'ill-conditioned' set of data. This ill-conditioning appears in the MDS output as a very high 'stress' value. The STRESS can take any value between zero and 1. A stress of zero means 'perfect fit'. A stress of 1 means that there is no structure in the data. Stress value is approximately the percentage of explained variance. Its formula is

$$\text{Stress} = \frac{\sum (\delta_{ij} - \hat{d}_{ij})^2}{\sum d_{ij}^2}$$

if $\delta_{ij} = 0 \Rightarrow \text{stress} = 0; \delta_{ij} = d_{ij}$ for each i, j .

When stress goes up the difference $\delta_{ij} - d_{ij}$ increases which means that more similarities are imperfectly represented by the corresponding distances. In our case when using 81 categories, stress value was near 1, and Alscal stopped the procedure because it could not make anything reasonable out of it. The problem is, that when considering the relationship of any two objects through a given characteristic, at least one of the objects must possess this characteristic, otherwise the Jaccard index will be undefined (because the denominator will be zero) and if this occurs, the MDS procedure breaks down³.

In the initial matrix that I have used (the one relating individuals to categories), most of the values are zero values. As indicated already, individuals only use between 4 and 24 categories each from a total of 81 (and it was very often the case that the denominator of the Jaccard index was zero, because many of the concepts were not present in many pairs of individuals). I considered that a sensible way of attempting to improve the working of the MDS procedure was to diminish the set of categories by assimilating groups of them. Through this assimilation I reduced the number of categories from 81 to 46 (see Chapter 4, Section 4.9). This type of data reduction is a common procedure in non-metric, qualitative analysis:

"Although data reduction can be done at any point of the research project, it is related mainly with the ease of the calculations, and it tries to adapt the shape of the available data to the one required by the analytical technique" (Krippendorff, op. cit: 79).

The resulting reduced list of 46 categories is the one presented in the previous Chapter (4.9). The stress of the scaling made on the bases of that set of 46 categories was 0,248, which seems sufficiently adequate for our purpose. However this reduced list also posed two kinds of problems when handle by means of MDS. First, this kind of category sets frequently seems to have 'freak

items'. For example, in the case of the indicated 46 category list there was one of those items —category 'lack of confidence'—. It consistently appears (not only in ALSCAL plots but also in plots produced by other procedures that I have used, as I shall explain later) isolated from all the others at a very distant point: it is an 'outlier'. In order to improve the 'expressivity' of the plot, I have eliminated that category. There is another category which I have also discarded: the category 'unspecified university career'. The problem with this category is that it is too close to another category: 'specified university career'. That small distance between them shows that their socio-meaning is very similar. In order to avoid cramming the plot with too many conceptual tags, specially when they are almost identical, I have decided not to include the category in question. Therefore I use 44 categories in the final categories plots.

However this reduced list still faces a second sort of problem. It still includes items with a connectivity that is too weak (in the case of categories, they are used by too few people; in the case of individuals, some of them use too few concepts). Here we face a dilemma, because the concepts which are less frequent (and the individuals who appear as 'freaks') usually are the more 'significant' in an interpretative sense, because they represent potentialities which are hidden in 'normal' items, and jet exist in the social milieu in question. These potentialities might point to future developments within that milieu. Here we confront a basic paradox⁴ of the sociosemantic method which I use: the smaller the socio-extension of a concept, the higher its meaning (because this concept should intensionally be related to other concepts also very unusual and therefore has a highly specific meaning, which is likely to be most revealing). But just because of the improbability of such unusual items, they seem to 'destabilize' the plot. To fit these freak points adequately, we would need more dimensions, because each of those points seems to define a dimension for itself.

In order to determine the consequences of discarding the most unusual items, I decided to eliminate the categories used by only six or less individuals. The discarded categories were 'hesitates to have children', 'family and job fulfillment'(used by six students each of them), 'housewife' (used by 5 individuals) and 'not to have children' (used by four students only). The plot resulting from this further reduced list of categories shows no significant

differences with respect to the 44 categories plot. Consequently I decided to consider the 44 categories set as an adequate base for generating the plots.

There are several different approaches to MDS. One of them was initiated by Shepard, who in 1952 created a program which is substantially non-metric in practice. His ideas have been furthered and perfected by many others (Kruskal, Lingoes, Roskam, etc.) I have used one of the most available and widely used computer program, ALSCAL, which is a development of Shepard approach. ALSCAL (Alternating Least-squares SCALing) was created by Takane, Young and De Leeuw. It is currently available in SPSS (Statistical Package for Social Sciences).

I have also used two other computer programs for MDS, both of them recently developed by the Data Theory Department of Leiden University in The Netherlands. These two programs are ANACOR and HOMALS. They offer some advantages over ALSCAL; the main advantage, from the point of view of this research, is that these two new programs accept more than 100 cases. Consequently by using them, I need not reduce the initial number of individuals (116). I have tried ANACOR and HOMALS with 116 individuals and 46 and 42 categories, respectively.

These configurations are consistent with those produced by ALSCAL and the gains with the extra 16 students are not substantial. Thus, I decided to use ALSCAL due to the fact that at the time when the mathematical analysis was done, ANACOR and HOMALS were not available in the market⁵.

5.3. Interpretation of the sociosemantic plots.

In this section I shall propose an interpretation of the graphic configurations generated, as described, by means of the use of MDS. Considering the notion of interpretation, Ibañez argues that: "The interpretation is only a moment in the process of analysis (the moment that corresponds to the analogical intuition of the researcher), a moment that is reabsorbed later on in the process"(Ibañez, J. 1979:318). It has been said in section 1 of this chapter that in order to interpret a configuration it is necessary

for the researcher to 'import' background information, so as to guide the analogical insight of the researcher with some external (to the configuration), meaningful data. In the case of sociosemantic plots of categories this information is just the intuitive meaning that the researcher ascribes to each concept. This intuitive meaning must be confronted with the purely formal, mathematical reality of the configuration (specifically with the **distances** between points representing concepts). In the case of sociosemantic plots of individuals that external information is the background knowledge which the researcher has about the individuals (gender, school, social background, etc.). It is impossible to interpret the meaning of a configuration of points if we do not know what those points stand for and this knowledge obviously is not given by the plot itself, but is projected onto it by the researcher.

5.3.1 Interpretation of the configurations generated through ALSCAL.

Figure 1 is a two dimensional configuration of 44 categories used by 100 students. It represents a sociosemantic plot of categories computed through the JACCARD and ALSCAL algorithms. The most relevant aspect of the configuration is the set of **distances** between the points which represent concepts which it embodies. Another relevant feature is the location of these points with respect to the two main axes⁶. Distances between points will be conceived as **sociosemantic distances**; according to this interpretation they would measure the strength of the **socio-connection** between each pair of concepts. The word socio-connection denotes the fact that a particular number of individuals share the use of a given pair of concepts. The higher the number of individuals sharing the use of a pair of concepts, the stronger the socio-connection between these concepts. This strength is **represented**⁷ in the plot by the relative distances between those concepts. According to this way of representation, the smaller the distance, the stronger the socio-connection between concepts or, alternatively, the larger the distance, the weaker the socio-connection between them. Here we face a problem about the ontology which we are dealing with: small distances between concepts may be interpreted as an index of social affinity between those concepts; but large distances between concepts may also be interpreted as strong social incompatibility between those concepts. Is there just one force at work (social

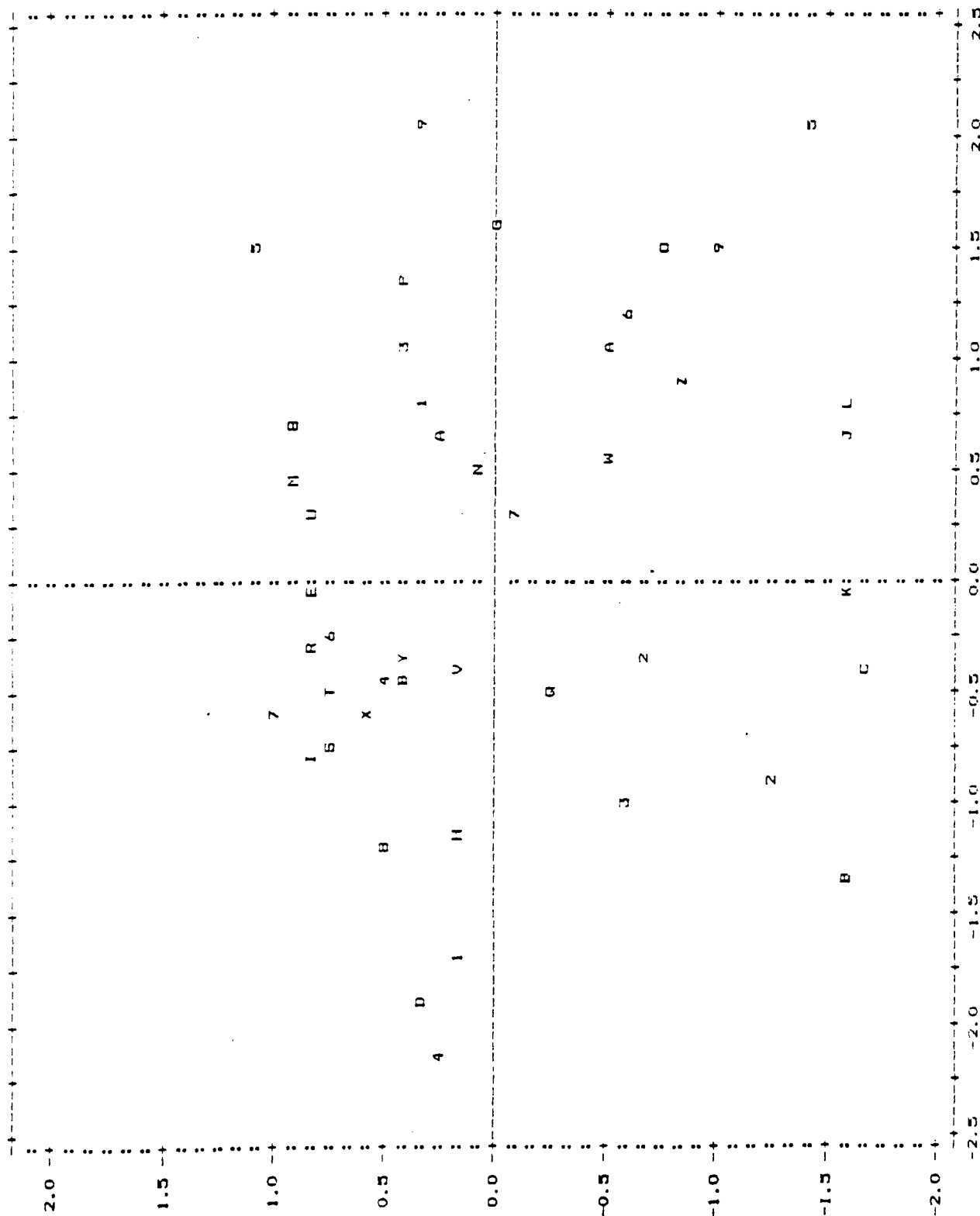


Figure 1.- Plot of categories

Minimum Stress 0, 000000

affinity or alternatively social incompatibility?) Or, are there two forces (social affinity and social incompatibility) working together? Of course, to decide that there is just one force (either attractive or repulsive) would make the analysis much easier. However, our intuitive guess is that some concepts attract each other whereas some other concepts repel each other. We will deal with this problem later.

5.3.1.1 The patterning of the configuration (figure 2).

In the first place we should pay attention to the purely perceptual, Gestalt-like, appearance of the configuration, which is known in MDS jargon as patterning: "Patterning refers to the way in which points are located and related quite independently of what they may 'mean'" (A. Coxon, 1982: 95). Figure 2 distinguishes in the same plot a region of a higher density of points, and a configuration of a lower density around this region, that I will call a halo. This halo has a crescent-like shape. I call a core the higher density area of the graph. The mean distance between concepts in this core is much smaller than the mean distance between the concepts in the halo. The mean distance from the concepts in the core to the socio-semantic center of gravity (the point 0.0 at which the two coordinates cross each other) is also substantially smaller than the mean distance between the concepts in the halo and the socio-semantic center. (In these type of plots the orientation of the axes is arbitrary and therefore has no special meaning in itself —although given a particular orientation, the researcher can find an interpretation for the two dimensions that these axes indicate. One can rotate the axes freely because the distances between points remain invariant under any rotation, and in the plot only these distances are intrinsically meaningful. The absolute values defining the coordinates of a point are arbitrary as well, in the sense that they could be several times bigger or smaller; and again under that transformation the proportion between different distances in the plot would remain the same) (Coxon, A. 1982a:93-94). The mean distance between the concepts in the halo is also bigger than the mean distance between the categories of the halo and the categories in the core. This fact seems to suggest that the socio-connection between the categories in particular regions of the halo and the categories in the core is stronger than the socio-connection between categories in separate

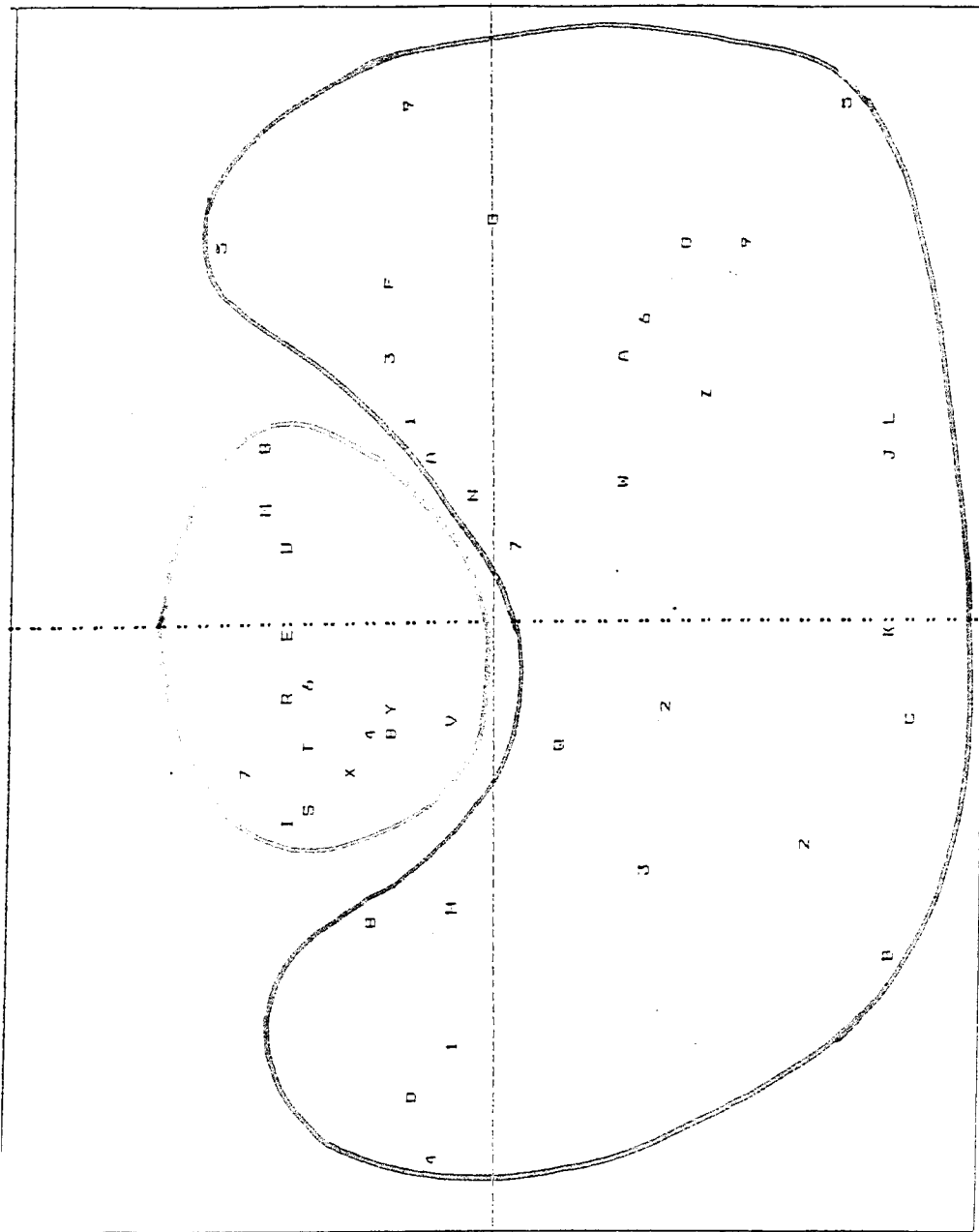


Figure 2. A gestaltic view of the plot of categories

regions of the halo (for instance, the region on the far left and the region on the far right.)

The core appears to have a strong self-affinity (the socio-distances between its categories are very small which would mean that they are strongly coherent between them). On the contrary, the halo seems to be, in a way, self-incompatible (the socio-distances between some of its categories are large which suggests that they strongly repel each other; in fact, some categories seem to run away to the outer regions of the plot in order to avoid the proximity of other categories.) Thus, the core seems to include highly socio-compatible categories, and in this sense it seems to have some sort of self-coherence. On the contrary, the halo seems to include highly socio-incompatible concepts; it seems to have some sort of intrinsic incoherence.

5.3.1.2. Interpretation of the main axes. (figure 3)

Figure 3 shows the same socio-semantic plot of categories with the conceptual labels corresponding to each point. When the meaning of the points is taken into account (when we name them, ascribing to them the categories which they stand for), the previous, purely Gestalt-like interpretation of the configuration showed in figure 2 is confirmed. At this new level of interpretation, our semantic insight (both that of the researcher and that of the reader) has necessarily to play a role. This semantic insight must now consider the plausibility of the sociosemantic distances given by the plot, which as stated before must be interpreted as measures of social affinity or social incompatibility. As Coxon puts it:

"The 'meaning' of the configuration is a more complex matter (than that of patterning). Once labels are attached to the points we bring all sorts of other information into play—what we know about the objects, what connotations they have for us, what subjects said about them and so on. As these meanings are put together we begin to recognize more subtle relationships. In fortunate circumstances, hitherto unsuspected characteristics of the data may then become apparent."(Coxon, A. 1982a:95).

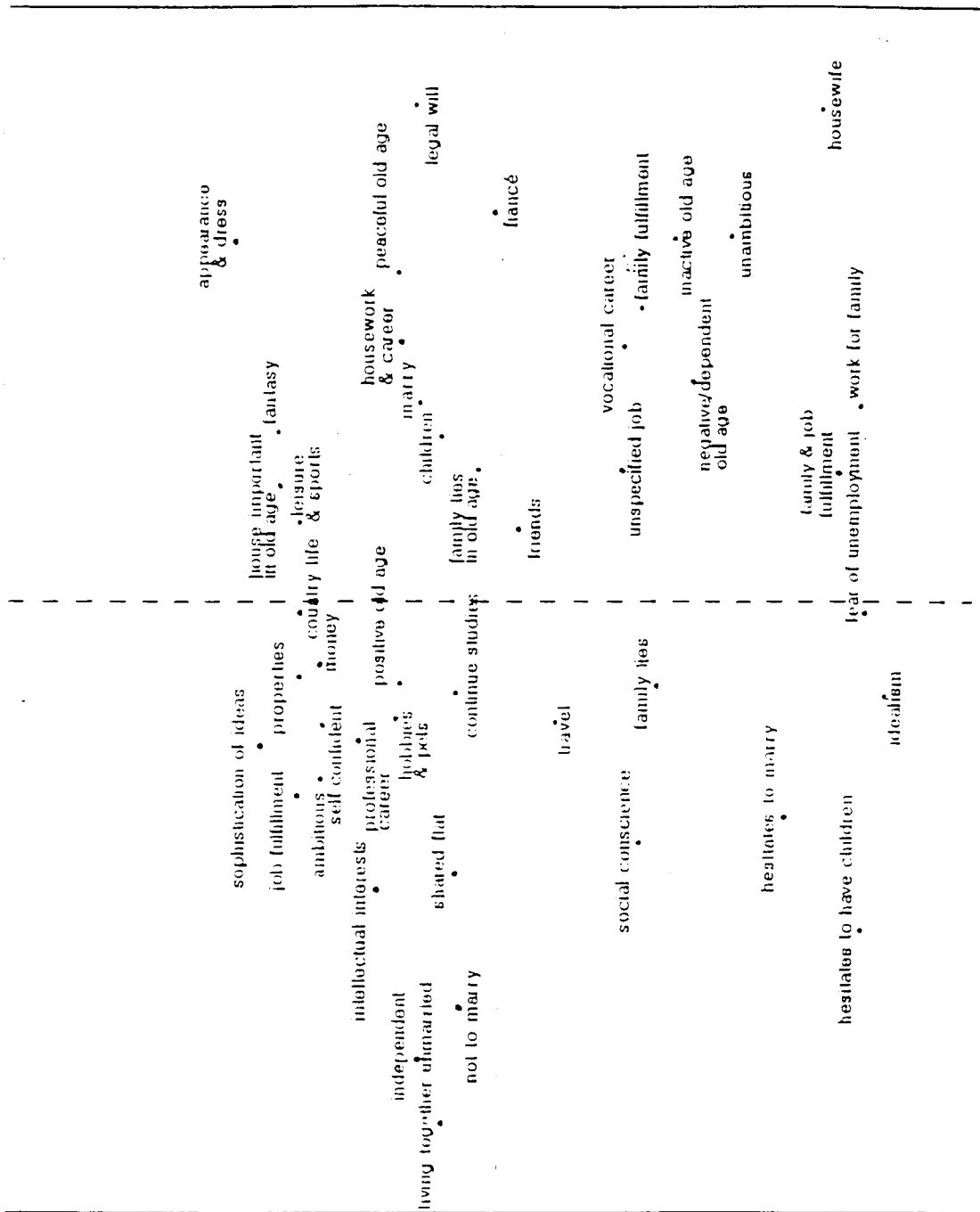


Figure 3. Plot of labelled categories

We start this 'meaning interpretation' of the configuration by looking at the location and distances between categories in relation to each of the main axes, first to the abscissa or horizontal axis and afterwards to the ordinate or vertical axis. Once the axes interpretation is done, we shall look at the sociosemantic distances between the categories trying to find a possible semantic structure in the plot. This structure embodies the communicational constraints which are present within the sample.

5.3.1.2.1. The horizontal axis

The interpretation of the main axes is central to the interpretation of this plot (with the reservation that we are talking just about the axes represented in the figure, though we know they might be rotated in any direction; in this case the axes would suggest, a different but not incompatible interpretation). We should look to the projections of the points (categories) on the horizontal axis first, as this axis represents the main dimension of the scaling. Starting from the extreme left towards the right (the abscissa axis goes from -2.5 to +2.5), this horizontal axis can be interpreted as measuring a very deep personal attitude: what we call the independent/dependent way of self-perception. The best way to define this attitude is just to consider how specific categories are distributed along this axis. The first two categories on to the left are 'living together unmarried' (-2.52)⁸, and 'independent' (-2.23). Both categories come from students' textual expressions and they appear in more elaborate ways in several essays. Nevertheless I think it is not necessary to add more specific wordings to understand that individuals who use these expressions value their independence (from parents, partners and children) as an important element of their personal fulfillment. It is important to point out that the category 'independent' is used by nine students, **all of them girls**. Are boys not appealed to by the idea of being independent? Of course, they are. What happens is that boys implicitly include the idea of being independent as an obvious, 'natural' component of the concept of being an adult male. In fact the idea of personal independence and autonomy is part and parcel of the generic self-perception of young men in our society, as boys' essays make abundantly clear. For them, there is no fear of not reaching independence in the transition from living with their parents to being married or living with a

partner. For boys independence is just presupposed. For girls this question appears in a different light. As said, only girls —some of them— 'want to be independent', first from their parents and later, in adult life, from husbands, partners and children. Specifically they want to remain independent from their potential husbands/partners. In the case of girls, the idea of independence appears as an aspiration and a project, and it is reflected in different degrees along the horizontal axis as we will see. The categories which follow on this axis are 'intellectual interests' (-1.66) and 'not to marry' (-1.54). This last category is used by six students, four of them girls. Further to the right, the categories 'job fulfillment' (-1.14), 'shared flat' (-1.08) and 'sophistication of ideas' (-0.98) appear. 'Shared flat' is used by nineteen students: seventeen girls and only two boys. The latent idea/desire for independence (both in economic and personal terms) is clearly present in most of the categories referred.

The progression on the independence/dependence axis, goes on towards the center of this axis through other categories which specifically refer to some prerequisite and to the content of that independence. They are categories such as 'ambitious' (-0.96), 'self-confident' (-0.81), 'professional career' (-0.82), 'positive old age' (-0.51) (this category includes an old category from the initial list of 81 categories: 'independent old age', which has been assimilated to it), 'money' (-0.22), 'properties' (-0.49), and 'to continue studies' (-0.29). To have a self-perception system defined by these categories (among others), means to have not only a generic desire for independence, but an elaborated comprehension of the factors that can make this personal independence possible. The resulting view on life appears as highly 'personalized': it is centred on individual self-fulfillment. In sum, the individuals who use categories located in the two left quadrants of the plot are the kind of people that later on we will describe as belonging to the 'profession-centred self-perception pattern'.

From point 0.0 rightwards the level of family and/or spouse/partner dependence increases reaching its maximum on the extreme right area of the plot. The first category which appears starting on the right quadrants (the 'dependence quadrants') is 'friends' (0.17). The location of this category shows that the relation with friends represents a minimum level of interpersonal dependence (it must be noticed here that in the essays 'friends' is mainly

mentioned when the students talk about their youth; in adult and old life 'friends' seldom appears). From this nearly neutral category—in relation to the independence/dependence attitude—the level of interpersonal dependence progressively increases, and it becomes family dependence, as we will see. Next category is 'family ties in old age' (0.37). This category shows the desire of being close to children and grand-children in old age, but only occasionally (weekends, Christmas...). Categories as significant as 'to have children' (0.49) and 'to marry' (0.68) follow. Their importance is reinforced by the fact that they are the most used categories of the whole repertoire: twenty seven girls and thirty two boys want to have children and thirty girls and thirty seven boys want to marry (in a sample of forty eight girls and fifty two boys). Therefore most of the students in the sample (more than 60%) include 'to marry' and 'to have children' in their repertoire.

The categories representing maximum family dependence are located on the extreme right quarter of the axis. The category 'negative and dependent old age' is located at point 1.18, the category 'family ties with parents' is at point 1.50 and at the same point is 'family fulfillment'. The category 'family ties with parents' stands for longer expressions produced by those individuals who see themselves as being cared for or caring for their parents all their lives. Here again gender plays a part. Seven girls and one boy share the idea of strong family ties through all their lives. In general, those categories which appear on both extremes of the axis are used predominantly by girls. The category 'fiance' (1.75), used by fifteen students can be interpreted as opposite of 'living together unmarried' (which is one used by a smaller number of students, just seven). The former category stands for the traditional type of relation, which is explicitly aimed at marriage. The latter category points to a relationship which explicitly circumvents marriage and avoids legal ties that would hamper the independence of the partners.

The two last categories on the abscissa axis, are 'legal will' (2.03) and 'housewife' (2.05). Apparently 'legal will' has no obvious connection with the idea of dependence, but looking to the way in which the students put it, a clear relation comes out. The students who use that category seem to be willing to keep their family ties even after death, and in some cases in a melodramatic way. The category 'housewife' has an evident connotation of dependence:

probably is the most dependent status imaginable in modern society. No wonder it appears on the far right of the plot, keeping a maximum distance with the first ('living together unmarried') and the second ('independence') categories on the left.

In conclusion, considering the projections on the first axis of the categories analyzed, this axis seems to represent a continuum from great independence (key category 'independent') to great dependence (key category: 'housewife').

5.3.1.2.2. The vertical axis.

The second dimension of the scaling, the vertical axis, seems related to a different attitude of the students, an attitude which will be called 'money expectancy'. This money expectancy is at the basis of the consumerist/non consumerist attitudes shown by the students. Therefore the axis can be viewed in both ways: as a money expectancy dimension or as a consumerist/non consumerist dimension. The categories spread along this axis according to the degree of money expectancy (alternatively of the consumerist/non consumerist attitude). Here consumerism means individual self-fulfillment through the access to goods and properties.

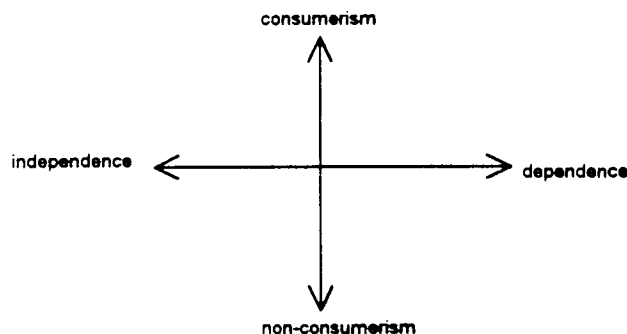
The upper half of the axis corresponds to the consumerist attitude whereas its lower half represents the non consumerist attitude.

In the plot, the values of this axis go from +2.00 to -2.00. Going from top to bottom, the first category on the vertical axis is 'appearance and dress' (1.09) It is predominantly used by girls. Ten girls and two boys express this category. The 'consumerist' implications of the category are obvious. The last categories at the bottom are 'idealism' (-1.63) and 'work for family' (-1.55). The 'non consumerist' connotations of the category 'idealism' are clear. 'Work for family' represents the 'non consumerist' attitude in a more subtle way: It is an altruistic, traditional attitude opposed to the egocentric, individualistic outlook of the 'consumerist subject'. If consumerism is related to a modern individualistic outlook and non consumerism is equated with a traditional,

family-centred outlook, the category 'work for family' (which is used exclusively by boys), clearly belongs to the latter.

The upper half of the axis (the 'positive money expectancy' half) includes categories such as 'house important in old age' (0.95), 'properties' (0.80), 'country life' (0.79), 'money' (0.78), 'ambitious' (0.75) and 'professional career' (0.58). On the other hand, the lower half of the axis (the 'negative money expectancy half') includes, apart from the two categories already mentioned — 'idealism' and 'work for family'—, categories such as 'fear of unemployment' (-1.55), 'unambitious' (-0.96), 'negative/dependent old age' (-0.86), 'social conscience' (-0.58). Some categories have no obvious interpretation in terms of this dimension of money expectancy. For instance, 'housework and career' (0.39) belongs to the 'positive money expectancy' half. This category is used exclusively by girls who want to work (in order to earn money and to have a professional life) but also want to assume at the same time the role of housewife. Therefore the relation of some categories with this dimension is strongly mediated through the other dimension, the independence/dependence dimension. Consequently a full account of the ordering of categories along this axis is only possible when the two axes are considered together in their mutual relationship.

After this preliminary interpretation of the two axes of the plot we should look into their combined effect, that is to say the actual location of the points and their mutual distances, which are the most important features of an MDS configuration.



5.3.1.3. Sociosemantic distances in the plot (figure 4).

We shall start by considering, in an initial approach, the biggest socio-semantic distance in the plot, that between 'living together unmarried', in the far left, and 'housewife', in the lower right corner. These are the two more distant categories in the plot. It is clear, at least to the semantic insight of this researcher, that this largest distance in the plot fits the strong incompatibility that we intuitively perceive between those two intentional categories. We feel that in fact those two categories repel each other; practically, they are opposite categories. Of course this intuitive judgement presupposes a huge background knowledge about the society and the culture in which those categories have been used. This background knowledge is very difficult to formalize as the experts in Artificial Intelligence know⁹. However this lack of formalization does not mean that the judgements based on that knowledge should not be taken into account as legitimate. Now, when these judgements coincide with the 'objective' data produced by sociosemantic analysis, this coincidence strongly confirms and furthers our semantic insight.

It is possible to find, in the plot, other examples of distant points, which correspond to intuitively opposite categories. I have linked in the plot some of them (figure 4). For instance, consider the distance, also very large, between the category 'housewife' and categories 'independent' and 'not to marry'. Again this large distance seems in accordance with our semantic insight. It is evident (within our social and cultural frame of mind) that 'being a housewife' and 'being independent' are concepts which repel each other to the point of incompatibility. The same occurs with the categories 'not to marry' and 'housewife'. We can find another examples which fit into this pattern. For example, the category 4 'living together unmarried' relates through very large distances to categories such as '(contemplating to have a) fiance' and 'family fulfillment'. This is also consistent with our semantic insight. However the sociosemantic distances in the plot are not always so well tuned to that insight. For instance, it is not obvious why, according to their very large distances, the categories 'living together unmarried' and '(interested in) appearance and dress' must repel each other so strongly. One can only guess that **expressing** interest in 'appearance and dress' (which amounts to not merely having a moderate interest in the matter, but considering it a central aspect of one's self-

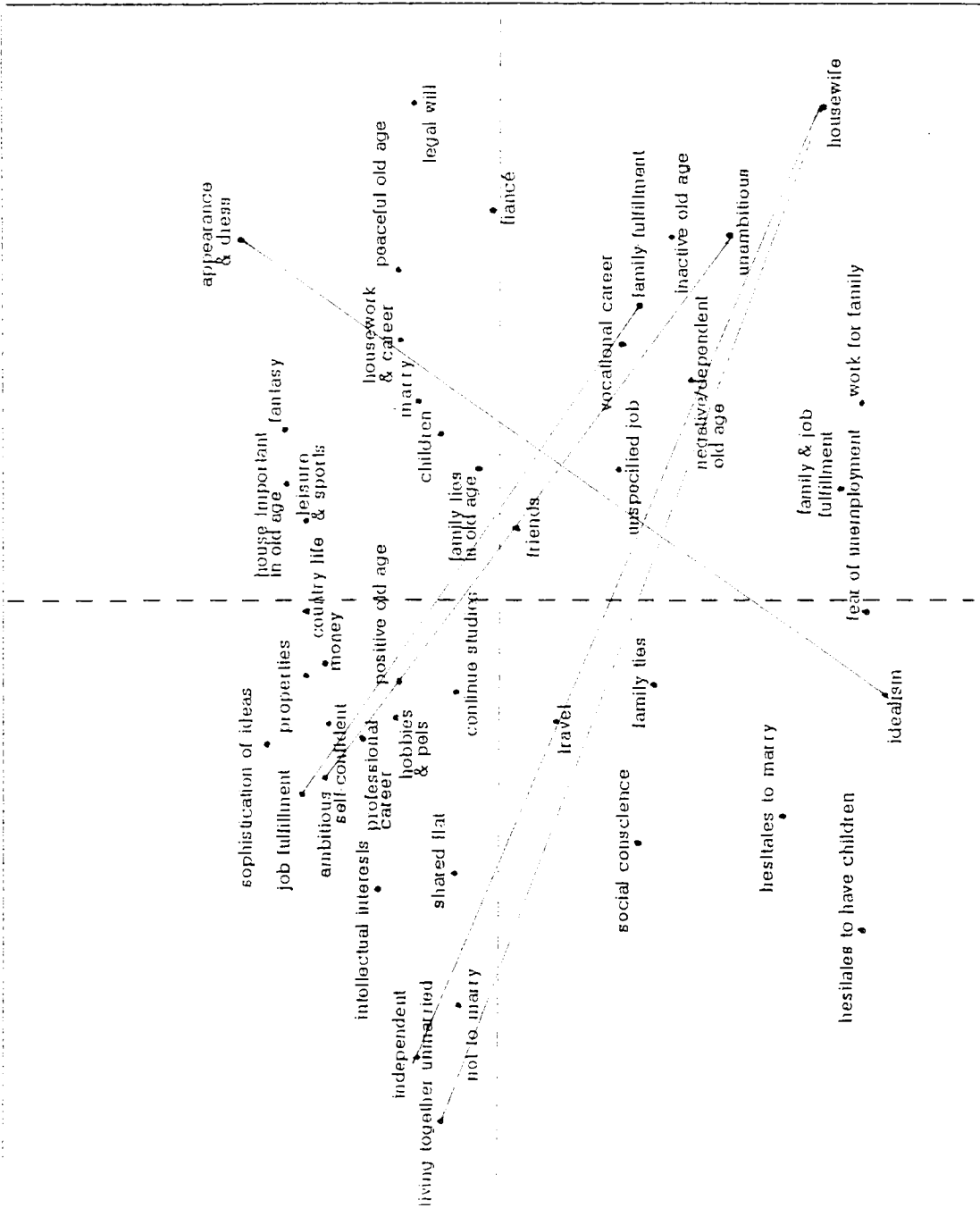


Figure 4 - Some distances in the plot of categories

perception) indicates an externally dominated image of oneself (an image defined by its external, rather than its internal, ways of recognition). That outlook would be, de facto, incompatible with the purpose, still pretty heterodox in Spanish society, of 'living together unmarried'. That purpose implies a remarkable independence with respect to the pressure of social dogmata, and this indicates a personality in a way opposite to the externally dominated personality which is characteristic of those who express interest in 'appearance and dress'.

A feature of some of these socio-distances is particularly puzzling at first sight: sometimes, two categories which are literally opposed are closer together than they are with respect to other categories which are only intuitively opposed. For instance, the sociosemantic distance between the categories 'not to marry' and 'to marry', which are categories literally opposed, is smaller than the sociosemantic distance between the categories 'living together unmarried' and 'to marry' (which are only intuitively opposed). This strange fact has two levels of explanation. In the first place it is necessary to remember that proximity to the center of gravity, which for the categories of the halo, roughly coincides with proximity to the core, indicates wider use of those categories and the other way around: the farther out one category is from the center or from the core, the less widely used it is. Now, the categories 'to marry' and 'not to marry' although considerably further apart, are closer than, respectively, 'to marry' is from 'living together unmarried' and 'not to marry' is from 'housewife', for instance. This is so just because 'to marry'/'not to marry' is more widely used than 'housewife'/'living together unmarried'. At first sight this 'failure' of sociosemantic analysis to represent literal opposites as being separated by distances bigger than just intuitive opposites may be considered as an essential shortcoming¹⁰ of the type of analysis which I am proposing. But, on the contrary, the apparent shortcoming accounted for by the previous explanation provides, in reality, the basis for a deeper level of analysis.

For a category, the closer its proximity to the sociosemantic center, the larger its socio-extension. This fact means that categories closer to the sociosemantic center have less socio-meaning (are more common and hence less socio-specific) than categories located farther from that center. In that sense central categories are **socio-generic categories**, while peripheral

categories are socio-specific ones. For instance the categories, 'continue studies', '(having) friends' and '(having) family ties in old age' are very socio-generic: a lot of the individuals want those things. Just because of that, they have very little discriminating power from a sociosemantic point of view and in this sense they have very little socio-meaning.

Now, the socio-specific categories should be viewed as explanations or potential developments of the socio-generic ones. These explanations through socio-specific categories reveal the hidden meaning (sometimes different hidden meanings) of the socio-generic categories. For instance the literal opposites 'to marry'/'not to marry' are categories more socio-generic (closer to the sociosemantic center) than the related intuitive opposites 'housewife'/'living together unmarried'. The latter are more socio-specific (farther from the center), but they explain the former: the radical decision 'not to marry' expressed by some individuals (only girls in our sample), seems to be taken as the result of a strong rejection of the possibility of becoming a housewife. Thus, 'distant' categories can hint at the reasons underlying the use of more common ones.

The semantic relations between categories in the core is, in general, much more intuitively self-evident. Those categories constitute a fairly accurate description of the middle class ideal of self-realization and happiness, with money predictably at the center. However in a Spanish context there are some slightly surprising items, for instance the presence of categories like '(contemplating to have a) country life' and 'hobbies and pets'. Traditionally Spanish culture has predominantly considered city life in positive terms and country life in negative terms. The increase in the appreciation of country life, as well as the presence of hobbies and pets, suggests a change towards a more ecological way of life and a consciousness of the degenerated living conditions in the cities, amongst the new generation.

5.3.1.4. Self-perception patterns in the categories plot (figure 5)

In the previous interpretation of the sociosemantic distances in the plot some groups of categories, with small distances and large semantic similarities between them, emerged. In the following section, I shall abstract and draw the

regions containing categories which intuitively seem to have a semantic similarity. These regions are drawn in figure 5. Such regions would tentatively correspond to outlooks representing different **self-perception patterns**. From that point of view I distinguish three main regions, enclosed in different type of lines, which correspond to three basic patterns. On the left side of the plot lies what I call the '**Profession Centred Pattern**'; on the right side lies the '**Family Centred Pattern**'; and between both of them, what I call the '**Dual Pattern**'.

A full explanation of those patterns will only be possible in the interpretative analysis which will be developed in Chapter 6. However it is possible just on the basis of the plot to show some of the features defining those patterns. The profession centred pattern in a way, is defined in contrast to the family centred pattern and vice versa; although both patterns overlap just on the area occupied by very socio-generic categories: to marry, children, friends, etc. The contrast between these two patterns appears in two ways. In the overlapping part of the profession centred pattern, family life is positively represented. In the central area of this pattern, family life is simply ignored, and in the extreme left area of this pattern, traditional family life is explicitly negated, or at least questioned (see categories 'living together unmarried', 'not to marry' and 'hesitates to marry'). Thus, the profession centred pattern includes two different perspectives —surrounded by different sort of lines in figure 6—, the one that is denoted as '**Yuppie Subpattern**', which includes very many of the core categories and is defined by an **active**, pushy and optimist attitude; and the one that is denoted as '**Progressive Subpattern**', defined by a **reactive**, reflective, critical outlook.

In contrast the family centred pattern seems dominated by an attitude of conformity and defensiveness towards the outside world. This pattern mirrors a strongly traditional view of reality: a view in which the interests of the person are focussed on her immediate social reality, the family, which seems to occupy most of the semantic space available. The outside world only seems to exist as a necessary, but rather uncomfortable environment to which the individuals, predominantly defined by their integration in their family, must adapt.

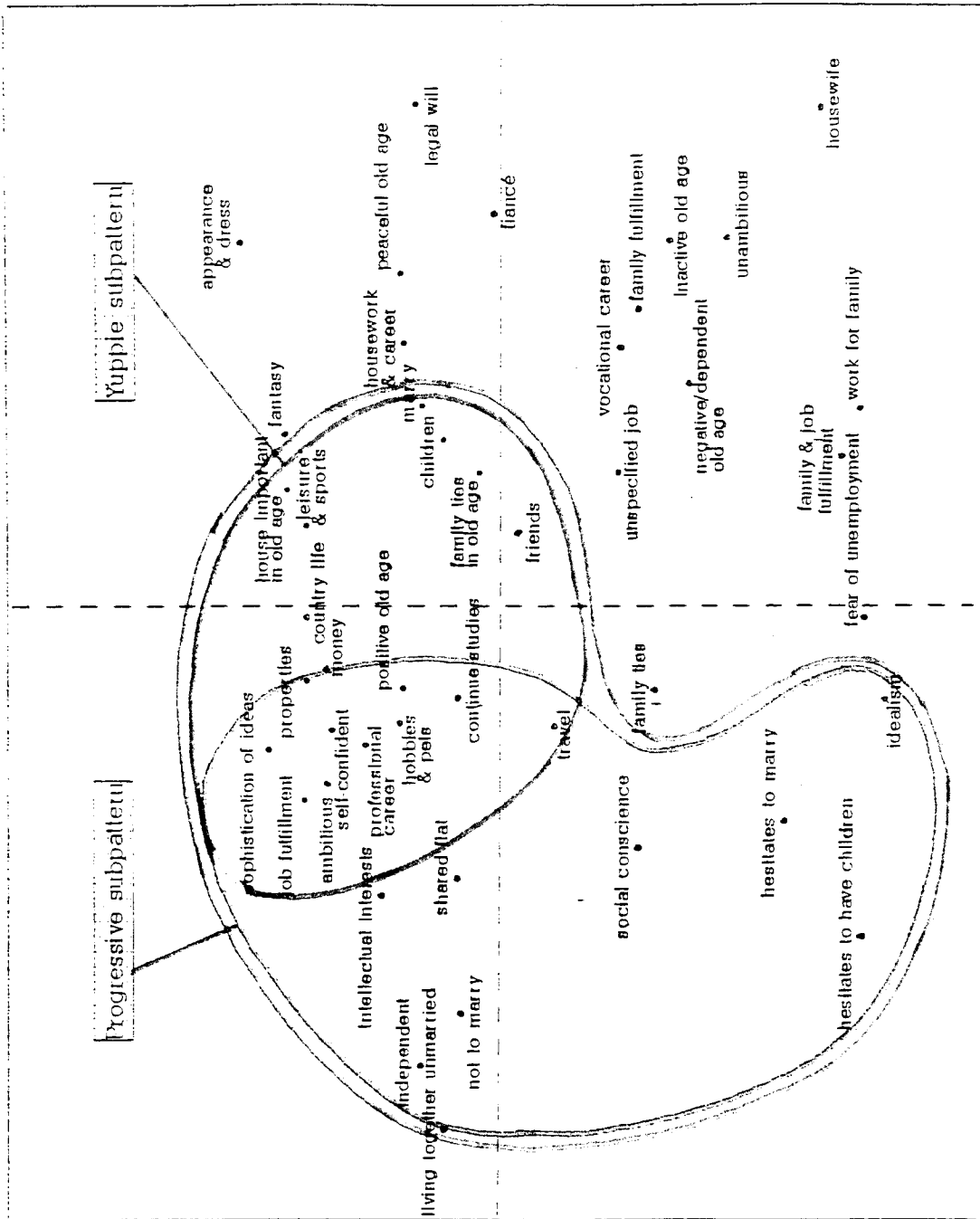


Figure 6 -Subpatterns of Self-Perception

The dual pattern does not have a profile as clear as that of the other patterns and subpatterns. Apparently it is almost as close to the core as the yuppie subpattern, and much closer to the core than both the family oriented pattern and the progressive subpattern. In this sense it seems to be connected to the yuppie subpattern more strongly than to the others. But on the other hand, the conceptual contents of the dual pattern strongly relate it to the family centred pattern. The word 'dual' tries to express this double, conflictive attachment. As a matter of fact things look clearer when some information external to the plot is taken into account. By looking to the concrete students who use the most characteristic categories in a given area, we can see that those patterns and subpatterns are strongly coloured by gender. The dual pattern is predominantly a girls' pattern. No wonder it reflects the tension between family responsibilities and professional self-realization.

The yuppie subpattern and the family centred pattern are predominantly boys' areas; the progressive subpattern is predominantly a girls' one. The dominance of the girls in their two spaces is stronger than that of the boys in their respective areas.

The consideration of the topological relations (relations of continuity/discontinuity) between patterns and subpatterns can be revealing. From that point of view the category 'continue studies' plays a key role. This category is, on the one hand, the bridge between the two predominantly girls' areas—the dual pattern and the progressive subpattern—. It is through the continuation of their studies that the resolution of the conflict which—as it will be shown in the following chapter—characterizes the dual pattern is resolved and girls can contemplate life from a nontraditional, progressive stance. At the same time this bridge between the two girls' areas constitutes a barrier between the two predominantly boys' areas—the family centred pattern and the yuppie subpattern. Academic achievement, an aspiration which is doubtfully formulated through the vague category 'to continue studies' is almost the only way through which the boys located in the family centred pattern could jump to the yuppie subpattern; but characteristically those boys do not contemplate that possibility. Incidentally, people in the profession centred pattern—both yuppie and progressive—tend not to use the vague

concept 'to continue studies' just because they **take it for granted** they will do so. They talk in more specific terms about their academic future.

5.3.2. Interpretation of the plot of individuals (figure 7).

Figure 7 is another two-dimensional sociosemantic plot of individuals generated through ALSCAL. One hundred individuals are represented in it, 25 from each of the four schools considered in this research. As was the case in the previous plot, the relevant features are the distances between the points as well as the location of those points with respect to the two axes. In this plot each point represents an individual. The distances between points should be considered as sociosemantic distances; they measure the strength of the semantic connection between each pair of individuals. This semantic connection consists of the relationship which exists between individuals through the use of common concepts. The higher the number of concepts shared by any pair of individuals, the stronger their semantic connection and thus, the smaller their distance on the plot. Individuals are close when there is a strong semantic connection linking them; distant individuals are linked by a weak (perhaps, non-existent) semantic connection. In other words, small distances between individuals should be interpreted as representing a high semantic or conceptual affinity between those individuals, and large distances between individuals should be viewed as representing a weak (perhaps, non-existent) semantic or conceptual affinity between those individuals. Alternatively, the proximity between individuals may be considered as a measure of their semantic compatibility and their remoteness can be interpreted as a measure of their semantic incompatibility.

As was the case when dealing with categories plots, here we face a problem about the ontology which we are presupposing. Is there just one force at work, either socio affinity or socio incompatibility? Or, are there two forces (socio-affinity and socio-incompatibility)? By looking at the pattern of the configuration we are tempted to guess that some individuals somehow attract each other whereas some other individuals repel each other. This problem will be faced later.

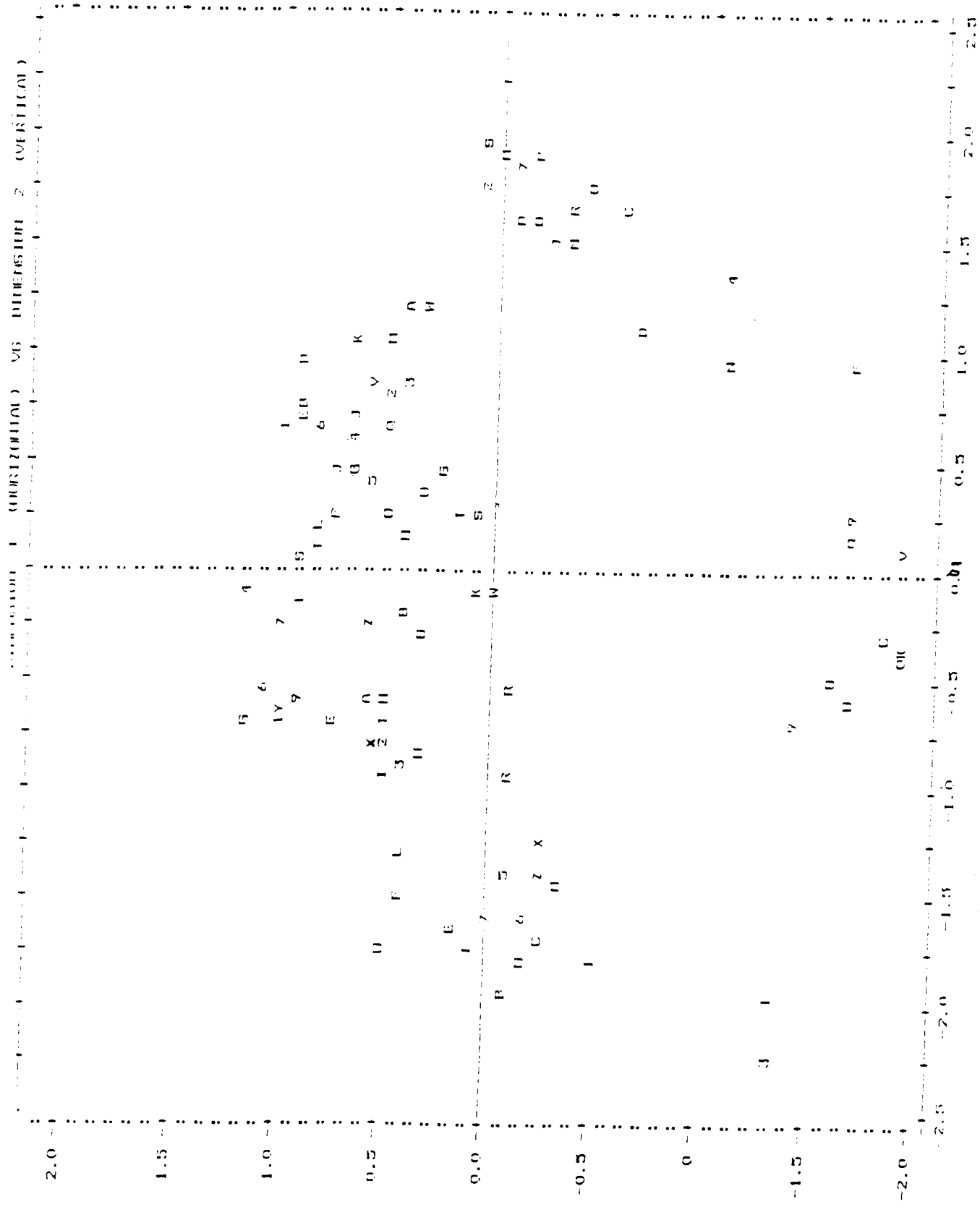


Figure 7 - Plot of Individuals
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5.3.2.1 The patterning of the configuration of the individuals' plot.

When we look at the general shape of the configuration of points (representing individuals) in the plot, we see that most of these points are concentrated as a fairly symmetric, open arc from one to the other side of the vertical axis, from point -0.50,-2.00 on the left side, up until point 1.00 of the vertical axis and then down to the right to point -0.50, 2.20. Eighty two of the one hundred individuals composing the sample are concentrated in that arc. The rest of the individuals are scattered in a loose configuration at the bottom of the plot. In total there is a collection of nineteen individuals outside the arc; twelve of them concentrate near the bottom of the vertical axis, and the rest of them are scattered in the plot between the central bottom and both sides of the arc. These nineteen individuals cannot be classified easily and will be dealt with later. Here I shall concentrate on the individuals composing the indicated arc. The density of points inside this arc is pretty high; there are two specially dense subregions: one of them is located on the extreme right of the arc and the other is just to the right of the vertical axis. There is an empty space between both regions. The density of the second of these regions progressively diminishes towards the left and then, another dense group, but with a density lower than that of the previous two, appears at the extreme left side of the arc. This configuration suggests that the individuals belonging to each of these three regions, share a characteristic combination of key concepts which is different to that of the individuals belonging to the other regions. To the left of the vertical axis, the arc becomes more evenly distributed, whilst to the right of the vertical axis the density is higher in the two groups aforementioned. Nevertheless, the total number of individuals within the arc is almost identical to both sides of the vertical axis (forty two to the right and forty to the left).

The arc may be interpreted as a discontinuous 'sociosemantic spectrum' occupied by loose subgroups of individuals defined by a higher degree of semantic similarities. The gaps which appear between those subgroups would indicate some sort of incompatibility between their respective members. Obviously individuals located on both extremes of the arc, are more dissimilar, more socio-semanticly incompatible than individuals belonging to adjacent groups who, specially when their groups are separated in a rather smooth way, seems to be able to support a substantial

amount of communicational traffic among them (Gould, P.,1980:181). Undoubtedly this traffic is constrained by the gap, but in any case the distances between adjacent groups are rather small, when compared with most of the distances in the plot; consequently, we can guess that there will be some communication across each gap. Specifically, the several clusters of individuals located along most of the left region must have a high semantic compatibility between them, a compatibility which they do not share with the other regions located on the right side of the plot.

5.3.2.2. Interpretation of the configuration according to the individuals' list of concepts (figure 8).

In order to interpret a plot like this, trying to extract a maximum of meaningful information, as Coxon proposes

"first we look for significant patterns in the configuration, i.e. detect structure, and secondly we ascribe a meaning or interpretation to those patterns or structures" (Coxon, A. 1982a:93).

In the previous section, concerning the patterning of the configuration, we have seen a basic structure: the open arc shaped by the concentration of most of the individuals along the horizontal axis. Those individuals are distributed in a way which strongly resembles the distribution of the concepts in figure 1; even the isolated individuals along the bottom of the plot are mirrored by a scattered group of concepts in that graphic.

The next step is to ascribe to each point the number of the student it stands for and to look at every student list of concepts to see if we find significant information capable of 'justifying' their relative location in the configuration, hence giving a sociosemantic meaning to that location. By doing so, and if we are fortunate enough, we can discover hitherto unsuspected sociosemantic connectivities between individuals and groups of individuals (Coxon).

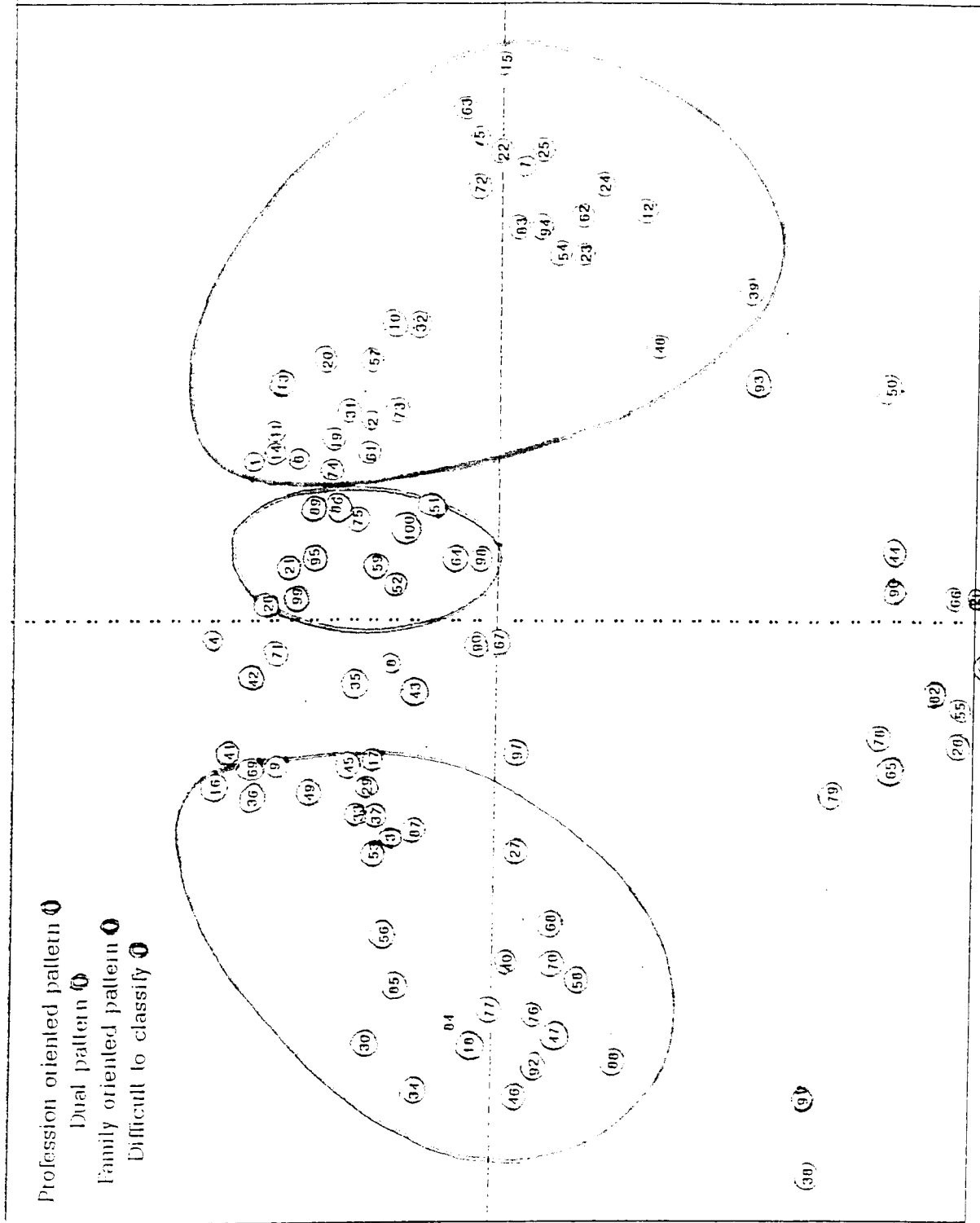


Figure 8. Patterns of Self-Perception in the plot of individuals

It has been said before that the categories plot and the individuals' plot are the two faces of the same sociosemantic coin. It seems to be so in a literal sense, at least with respect to the horizontal axis. In fact, it seems as if each plot is the mirror image of the other: the right hand side of one plot becomes the left hand side of the other. The horizontal axis —corresponding to the main dimension—, which in the case of the categories plot was interpreted as the independence/dependence dimension, can be interpreted in the individuals' plot as representing the same independence/dependence dimension, but in an inverted way: here maximum independence is placed on the far right and maximum dependence on the far left.

We will start, as was the case in dealing with the categories plot, by interpreting the 'independence side' of the axis. Student number 15¹¹ is at the end of the right hand side. When we look to her repertoire of categories, we find that it is a paradigmatic collection of categories allocated on the left hand side of the categories plot. She uses 11 categories; this implies a rather high dimensionality and, in principle, high possibilities of semantic connectivities with other individuals (therefore, considering just this aspect, she should not be in such far away position). But her concepts are: 'living together unmarried (as an adult)', 'independent', 'not to have children (a concept assimilated to the category 'hesitates to have children)', 'intellectual interests', 'to share a flat (with friends, as a university student)', 'job fulfillment', 'ambitious', 'sophistication of ideas', 'specified professional career (assimilated to the category 'professional career)', self-confident', 'active and positive old age' (assimilated to the category 'positive old age'). So she has a radically 'independent' outlook. These eleven concepts almost totally coincide with the first eleven categories located on the upper 'independent region' of the horizontal axis in the categories plot (figure 3). This student provides a first example of the symmetry that exists between the two plots.

The concepts used by student 15 coincide with what most people understand by the idea of individual independence. From a professional point of view, she wants to have a specified university degree and a job in that specialty; so it is reasonable to think that this job, if attained, will make her economically independent. From a personal point of view, she wants to share a flat with friends while being at the university, (although she is living only 30

minutes away from Madrid's two main universities); so she wants to be physically independent from her parents as soon as possible. If she eventually has a partner, she sees herself as merely living with him, without marriage and without children. From a psychological and intellectual standpoint, her self-confidence, the sophisticated expressions she uses and her intellectual interests are remarkable. Everything in her essay allows us to think that she has the elements necessary to face life from an independent, individualistic, 'modern', stance.

The extreme 'independence region' of the main (horizontal) axis -from point 2.24 (individual 15) to point 1.49 (individual 54), includes fourteen individuals: nine girls and five boys. In this respect, the categories plot and the individuals' plot are symmetric too. 'Independence' is an outlook elaborated mainly by girls, and it defines a predominantly feminine area (see figure 11).

The rest of the individuals of the region in question (63, 5, 22, 72, 7, 83, 94, 25, 24, 12, 62 and 23) share with individual 15 most of their concepts, a circumstance which is reflected by their small mutual sociosemantic distances. All of them belong to what we call the profession centred self-perception pattern (see figure 5). Most of them come from middle class backgrounds (8 from Herrera School, 4 from Cortijo School) and only 2 from one of the two working class schools (Picasso School, see figure 9).

Just to the left of the 'independence region', there is a gap (between points 1.49 and 1.21), and at point 1.21 (individual number 10) the arc continues without a significant interruption towards the left until individual 43, at point -0.27. Here another gap appears until individual 41, at point -0.53. The arc continues to the left until individual 53, at point -0.92, where another gap appears, until individual 68, at point -1.23. The similar magnitude of these three gaps (0.28, 0.26, and 0.29, respectively) is remarkable. The intermediate region between the first and second gaps is mainly located on the positive side of the main axes, although there are seven individuals placed at the beginning of the negative side of the abscissa. According to our interpretation, this region would show a progressive decrease in the levels of independence, corresponding to a progressive decreasing in the socioeconomic level of the

students represented. This tendency turns out to be accompanied by a less noticeable, but still present, decrease in the number of girls.

As indicated already, the density of individuals is higher immediately to the right of the vertical axis. There is a compact group made up of twenty eight students who are divided into two subgroups: the one to the right has fifteen individuals, all of them, except two, belonging to a profession centred self-perception pattern. In the group to the left ten individuals clearly belong to the dual or mixed self-perception pattern, whereas there are 3 more individuals who are difficult to classify (see figure 8).

Looking to the facts from the theoretical perspective provided by the idea of the self-perception patterns, the gap between the two regions on the right somewhat disappears because on both sides of the gap there are profession-oriented students. The difference between individuals in each side lies in their level of individual independence, their relatively conventional/unconventional outlook, and the different gender composition. Profession centred students of the second group are semantically connected with the 'independence group' through the concepts of professional life, but they differ in their concepts about family life, which are pretty conventional. Most of the profession centred students of the second group use concepts such as 'I want to be married' and 'I want children' while the independence group reject both concepts or hesitate about them. A typical example of the students belonging to this second group is student 74 (0.63). The categories he uses are: 'to marry', 'children', 'money', 'properties', 'continue studies', 'university career', 'country life', 'sports', 'appearance and dress', 'independent old age' and 'peaceful old age'. He is quite in the middle of the group and as said a very representative example of it.

Highly connected with these profession oriented students, having minimal distances with respect to them, the dual or mixed students start to appear. The semantic connectivity with the near profession-oriented students is established through two types of concepts. Categories such as 'marry' and 'children' and concepts related to studies and career. The dual group includes 11 students all of them girls; the appearance of a substantial subregion like this, surrounded by profession centred students and exclusively occupied by

girls is quite remarkable. The level of individual independence represented by these girls decreases in comparison with the level which is characteristic of typical profession centred students, because the former are prepared to share their professional life with motherhood. By looking at the categories used by student 99 (0.10) we can see the 'flavour' of a paradigmatic dual student. This is her repertoire: 'continue studies', 'sports', 'university career', 'to marry', 'children', **'housework and career'**, **'family and job fulfillment'**, 'money', 'legal will' and 'family ties in old age'. Apart from the categories 'housework and career' and 'family and job fulfillment', which are exclusive of the dual pattern, the rest of her categories are shared by most of the profession centred students.

Besides these eleven 'dual' girls, there is a boy, student 13 (0.97), in their vicinity, who is connected to them through the concept 'family and job fulfillment' (on top of the concepts related to studies and career). He is not included in the dual self-perception pattern because even though he is prepared to enjoy family life, he does not contemplate this family life as interfering with his working life. There are one or two more boys with a similar attitude along the horizontal axis. They would like to take care of their children after the working hours and at the week-ends. One of them words his attitude in this terms: "At the end of the day I'll come home very happy because my children will be waiting for me and I'll help them with their homework".

The vertical axis approximately coincides with the division line between two self-perception patterns. To the right —and just at the beginning of the left side of the horizontal axis— we find the students who belong to the profession centred and dual patterns; and to the left —starting from individual 35 (-0.26)— we predominantly find students belonging to the family centred pattern. There is a fringe of profession centred students (five individuals in total) along the top half of the vertical axis. These individuals, although primarily characterized as profession centred, share with family centred students, some concepts such as 'family fulfillment', (student 8, -0.19), 'work for family' (student 71, -0.17), 'inactive old age' (student 4, -0.09), and 'dependent old age', (students 67, -0.13, and 90 -0.09). The use of such concepts by those students explains the fact that they are a little to the left with respect to the vertical axis, as they have a specific concept through which to establish an important semantic connection with their neighbors in the 'family

region'. What progressively characterizes the individuals to the left of the vertical axis is their dependence on their families (parents, spouse, and children), and less interest in their studies and their working life. One can also perceive a pessimistic general attitude in some of them. Their level of dependence on family life increases as they approach the end of the horizontal axis. Let us see some examples. For instance, student 49 (-0.67), is located near the beginning of this group. Her categories are: 'friends', 'appearance and dress', 'to marry', 'children', 'housewife', 'family ties in old age', 'house important in old age', 'country life', 'positive old age' and 'travel'. This student has a fairly high level of connections with the people located to the right of the vertical axis: consisting of categories relative to old age, on top of the customary references as 'to marry', 'children', etc. But a very significant concept strongly connects her with the students located to the left: 'housewife'. Clearly this is the concept that presupposes the highest level of family dependence. The fact that all categories related to studies or work in adult life have disappeared from her repertoire, is also remarkable: this lack of professional expectations radically separate this student from the profession centred and dual patterns, including her within family centred pattern. Another instructive example may be student number 92 (-1.80). This student is located near the left end of both the family centred group and the axis. She can be considered as an extreme representative of family centred students. Her set of concepts is revealing: 'friends', 'not to continue studies', 'fiancee', 'marry', 'children', 'housewife', 'passive, negative and dependent old age', 'family fulfillment' and 'unambitious'. This case clearly shows an almost total lack of aspirations to personal independence. She is prepared to transit quietly from her family's 'protection' to her fiance's, to her husband's and to her sons and daughters'. No intention of continuing studies, no professional ambitions of any kind. For our student a happy life apparently consists in being a family defined individual, from cradle to coffin.

There are some dual students (eight in total) scattered throughout the family centred region, mostly to the right side of it. These students (all of them girls) belong to what might be called 'voluntaristic dual sub-pattern'. They are students who show most of the features of which are characteristic of family centred individuals, but refer to some sort of vocational/professional expectations. However, these expectations —specially among the students of

this subgroup who are located on the extreme left— appear as swamped by the family centred categories, and hence they seem rather unrealistic.

The family centred region has a number of points (students) lower than the profession centred area (35 versus 47). In the family centred region boys are dominant, although not much, 19 versus 16 (see figure 10). Students from the middle class schools practically disappear (3 from Herrera School and 6 from Cortijo School); most of them belong to Zaragueta School (16), and Picasso School (8), (see figure 9).

5.3.2.3 Interpretation of the configuration according to backgrounds of the students (figure 9).

In figure 9 the individuals belonging to a each school are represented in a different colour. Individuals from 1 to 25 belong to Herrera School (middle class professional families), individuals 26 to 50 belong to Zaragueta School (working class families), individuals 51 to 75 belong to Cortijo School (lower middle class families) and individuals 76 to 100 belong to Picasso School (working class families). Figures 9a, 9b, 9c, and 9d show the location in the plot of the individuals belonging to the four schools. It is convenient to remember that, as was explained in chapter four, I shall here use the school as a loose indicator of social background. The few cases in which the family background does not correspond with the general background attributed to the school will be individually explained in detail. In reality, when individuals are distinguished according to their corresponding school, the presence of different patterns of social backgrounds in each of those schools becomes too patent to dismiss. The clumping together of individuals belonging to the same school/same social background is easily noticeable. By coloring every school with a specific colour their different ways of distribution become clear.

From this point of view, the arc is a display, from the most underprivileged social background, located to the left, to the most privileged, which are placed to the right. Tables I to IV show the jobs of the fathers and mothers for each school; the level of these jobs is a good indicator of the social background to which the individuals of each school belong. These tables are ordered from the most unprivileged to the most privileged collective,

mirroring the way in which individuals are located within the arc (compare tables I and IV with figure 9). The students located further to the left in figure 9 are those from Zaragueta school. The students from Picasso school appear more evenly distributed throughout of the whole of the arc; in general they are located to the right to Zaragueta's students. In a way this seems to be inconsistent with the fact that generally speaking the social background of Picasso's parents is a little lower than that of Zaragueta's parents. However, on closer inspection some interesting differences between the backgrounds corresponding to both schools appear. The working class background of Zaragueta school, in a way, is more 'conservative' than the working class background corresponding to Picasso school. A full account of these differences will be given in the next chapter.

The predominance of the two middle class schools starts in the proximity of the vertical axis. These two schools keep increasing their weight towards the right; on the extreme right we find a clear majority of Herrera's students, therefore, inside the arc the larger semantic distances in general correspond to students from the socially more distant school/areas. Besides, the proximity between students from the same school is not uniform in the arc. The highest level of dispersion corresponds to Picasso school, and the highest level of concentration corresponds to Herrera school. For instance, the extreme right area has 14 individuals. Eight of them belong to Herrera School, four to Cortijo School and two to Picasso School. Later on, we will take into account specific information related to some of those individuals, information about their family background, the concepts they use and share and to which pattern of self-perception system they should be assigned.

This different pattern of distribution of the students depending on which school they belong to requires careful consideration. Students from the schools in the two social extremes (Herrera and Picasso), are not only located in different areas of the plot, but also show the most different distribution patterns. Herrera's students are highly concentrated on the right half of the arc (see picture 17a). The semantic distances between most of those students are really small, they clearly dominate that region in the arc, the most populated one. This suggests a communicational similarity and consistency between the individuals of the group. Eighteen out of the twenty five Herrera's students are

in the right half of the arc. This half of the arc concentrates forty two individuals in total. More important, all of them except two (who belong to the dual pattern) are profession centred students.

In contrast, Picasso's students show the most scattered pattern of the four schools. Their dispersion easily stands out, they are present almost all around the plot. Certainly, eleven of them are on the left half of the plot (the region corresponding to the family centred individuals), and eight of them on the right half of the arc (mainly in the region corresponding to the dual individuals), this suggests a little predominance of family centred students among the group. This predominance becomes clearer when the substantial cluster (six individuals) on the far left is considered. It seems that students from this specific type of underprivileged social background do not have a very high level of communicational coherence between them. They are clearly fragmented in their views and expectations. In general these views are strikingly dissonant with respect to the realities of their immediate social environment. Apparently we cannot talk about the Picasso School as a homogeneous social group. They are the least homogeneous of the four schools. Even though the social backgrounds and the students' environment are very similar (see tables II and III), the self-perception systems of some of those individuals appear as substantially independent from the supposed 'material conditions' of their lives. This remarkable fact will be explained in the next chapter. Nevertheless it seems coherent with our conception of individuals as autonomous and self-organizing systems already explained in chapters 1 and 3.

The two schools, which are in an intermediate social position are Cortijo (lower middle class) and Zaragueta (upper working class). Cortijo school (figure 10c) shows a configuration that is more evenly distributed than that of Zaragueta school (figure 10b). The former has thirteen of its students in the right half and eight students on the left half. Zaragueta School has sixteen students on the left half and just three on the right half. There is a remarkable scarcity of profession centred students in Zaragueta school, just two. There are only two dual students as well, and they are located in the limit between the dual and family regions. A substantial amount of Zaragueta's students are located on the right area of the family centred region; that means that they

Figure 10a - Herrera School

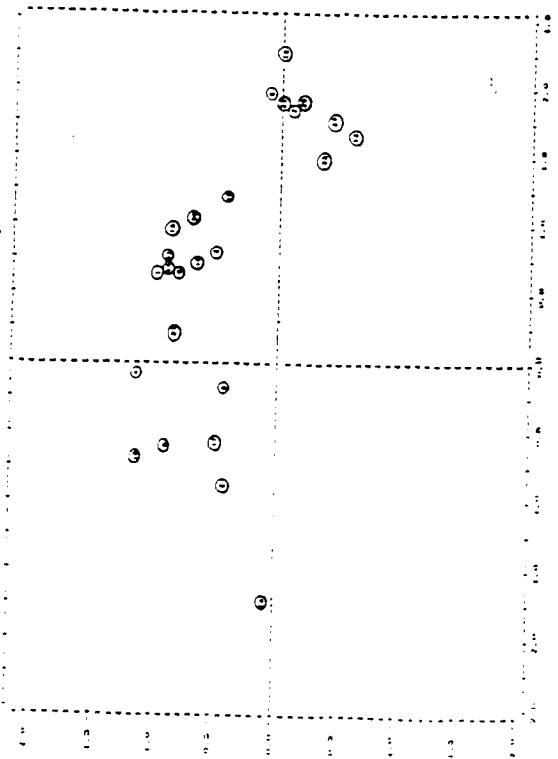


Figure 10b - Zaragueta School

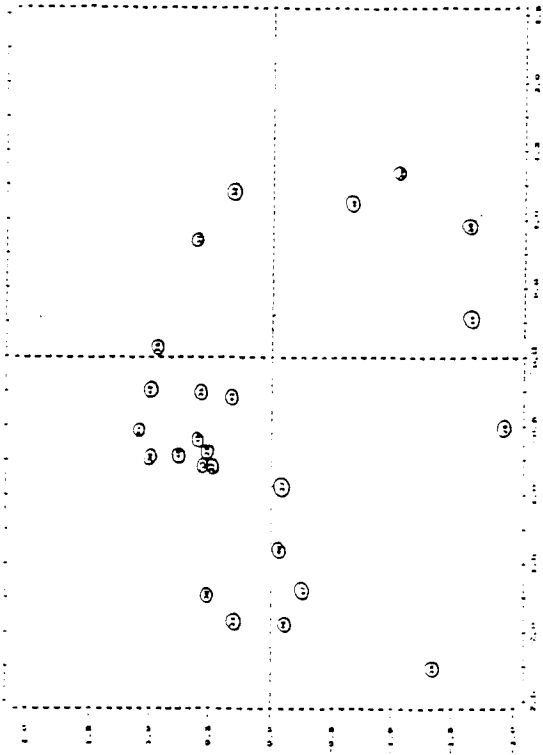


Figure 10c - Cortijo School

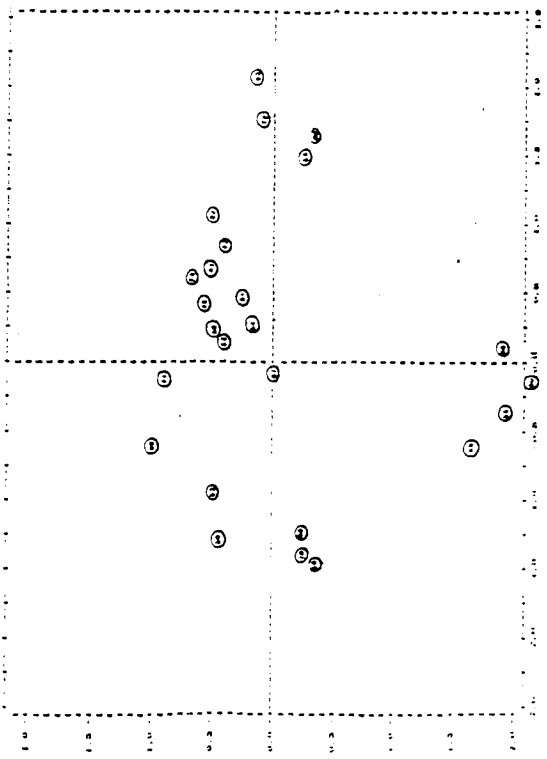
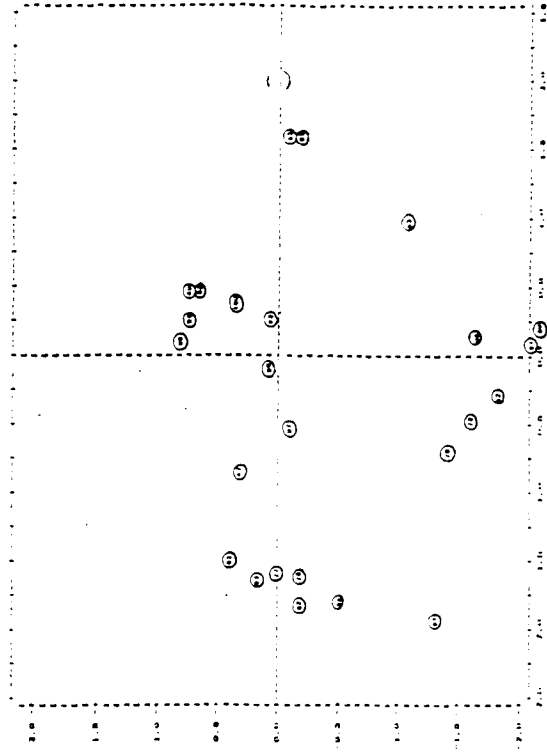


Figure 10d - Picasso School



have a family centred general outlook, but composed with some sort of professional expectations.

5.3.2.4. Gender in the plot (figure 11).

Figure 11 shows the points of the configuration according to gender. At the first glance the distribution of girls and boys in the plot seems rather similar. However, on closer inspection some differences stand out. There are three regions in the arc clearly dominated by girls. The two extremes and an area near the middle, a little to the right. The six girls on the extreme left represent a maximum degree of dependence. The key category in this respect is 'housewife'. Four of those six girls view themselves as housewives. Other common categories which appear as characteristic of this group are 'family fulfillment' and negative/dependent old age'.

The second important cluster of girls is the one located slightly to the right of the vertical axis. This nine girls are prototypical of what is called the dual self-perception pattern.

The key categories here are 'housework and career' and 'job and family fulfillment' (they are used by eight and four, respectively, of the nine girls). The presence of these girls in the middle area of the dependence/independence axis shows the conflictive balance they try to keep between their family and professional expectations.

The third significant cluster of girls is located at the extreme right of the arc. There we find a group of thirteen individuals, nine of them girls. These girls represent attitudes of maximum independence and open rejection of some of the tenets of traditional family life. They make up what is called the progressive subpattern. The key category defining this group seems to be 'independent', which is explicitly used by five of the nine girls. However some other categories are more widely used: 'shared flat' (seven girls), 'hesitates to have children' (six girls). In addition this group of girls share many of the professional expectations which define the profession centred pattern.

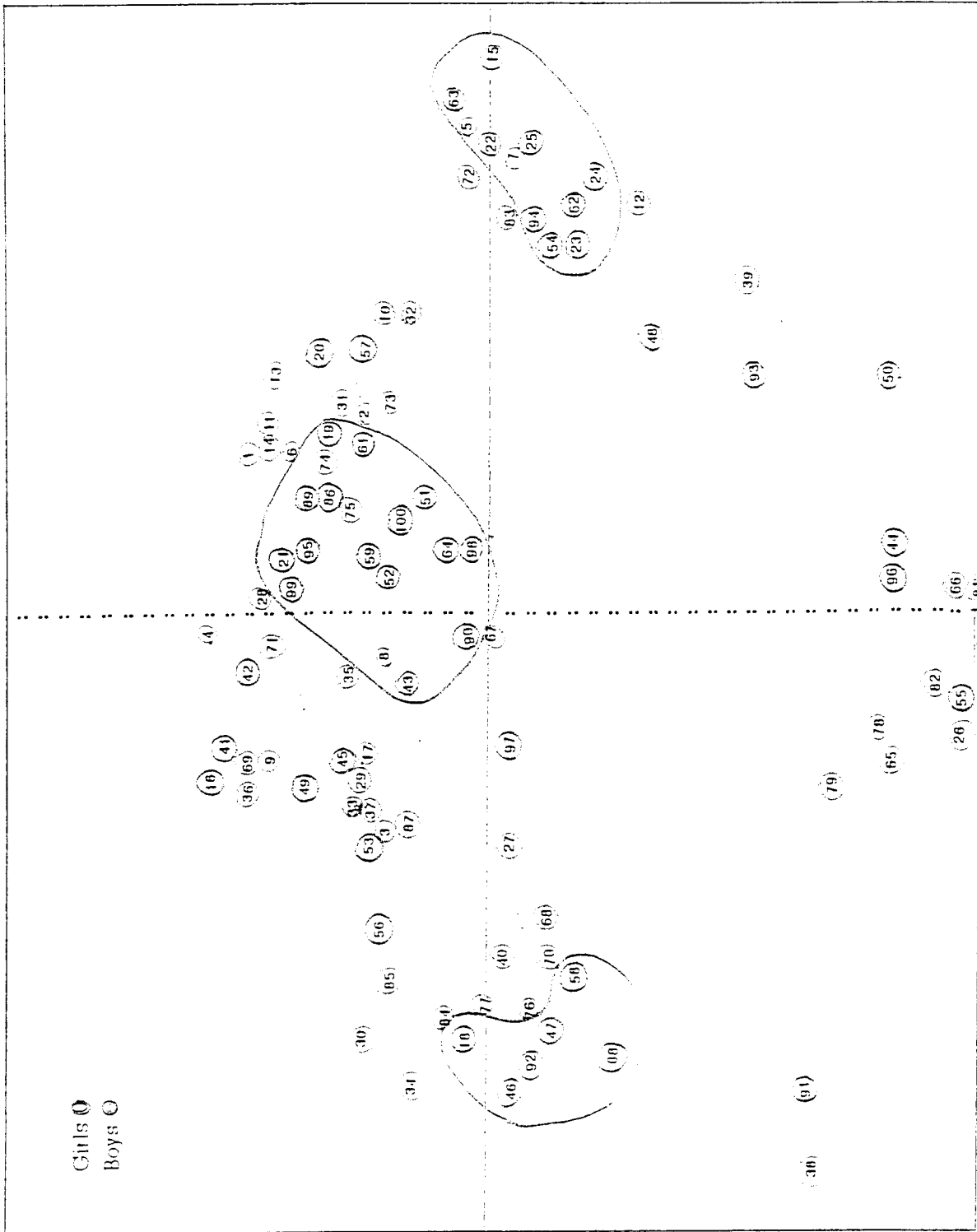


Figure 11.- Plot of Individuals coloured according to gender

When we look at the boys distribution, we find that they are more evenly placed through the arc. However two main regions mainly occupied by boys can be detected in the arc. The first of these areas is adjacent to the first cluster of girls in the family region. There are nine boys there which somehow represent the extreme masculine version of the family centred pattern. The key categories seems to be 'family fulfillment'; other categories widely used in this group are: 'negative old age' (seven boys), 'vocational career' and 'fiancee' (five boys).

A second region dominated by boys (forming a group of eleven) is also just to the right of the feminine region whose individuals were described as typical representatives of the dual pattern. In turn these boys are typical examples of the yuppie subpattern. They foresee a life focussed on their profession, but they also contemplate, in a secondary place, to have a standard family life. They see themselves as successful professionals, provided with all the trappings of a consumerist style of life. The key category seems to be 'professional career', which is used by eight of the eleven boys. Other categories also widely used are: 'continue studies' (nine boys), 'positive old age' (eight boys), 'money' (six boys) and 'job fulfillment' (six boys).

5.3.2.5. Distribution of self-perception patterns in the plot.

This section intends to be a recapitulation of the previous analyses. As a result of them we can attempt a classification of the students according to the self-perception pattern to which they are closer, by comparing their individual lists of categories to the set of categories which are characteristic of each self-perception pattern. This comparison should be done carefully and does not always produce clear cut results. Some individuals have a repertoire of categories that makes them difficult to classify. In this respect some decisions should be taken on an intuitive bases. But in general this process of classification produces definite results.

In figure 8 the individuals are coloured depending on the self-perception pattern assigned to them. At the first glance, the space is clearly divided: profession centred students to the right, family centred to the left and dual students in between. The right half of the arc is mainly occupied by

profession centred students or 'professionals'. They are the only occupants of the extreme right area, share the rest of the right half with students with a dual self-perception pattern, and are also present in the left half of the arc, although they progressively diminish towards the left end of it.

Dual students dominate the central area of the arc, a little to the right of the vertical axis. They define an area of transition between the left and the right of the arc, that is to say, roughly speaking, between middle class and working class schools. In the right side of the arc, twenty eight individuals out of a total of 42, have a profession centred self-perception system; 11 individuals have a dual self-perception system, and 3 are difficult to classify. No family centred individual appears in this side of the arc.

Family centred students, 'family individuals' for short, are concentrated in the left half of the arc. In this side twenty out of a total of forty students are family individuals; they share this left half of the arc with 8 dual individuals, 9 professional individuals and 2 individuals difficult to classify. Four of those dual individuals in the left half area have small distances with the main dual area to the right; in fact they enlarge the dual area towards the left. The rest of the dual students in the left half, and the nine professional students who appear on this area, have a peculiar semantic repertoire which is responsible for their location so far away from the other students included in the same self-perception pattern. They will be analyzed individually, further down. The eighteen students scattered around the plot outside the arc do not make up a significant pattern in relation to their individual self-perception systems.

Basically, the initial hypothesis about the existence of three fundamental patterns of self-perception is confirmed by this sociosemantic plot of individuals. In general there is a remarkable semantic proximity between individuals sharing the same self-perception system. Typical family centred and profession centred students keep the longest distances in the plot. Students provided with a dual self-perception system, as they share some of the most characteristic categories of the family centred and profession centred patterns, are close to both of them. In reality they are between them, but a little bit closer to the profession centred students than to the family centred students. In

this plot, the fact of the proximity between individuals with similar self-perception systems define three basic communicational environments: the family environment, the professional environment, and the particular combination of the previous two which is called dual. Potentially, family and professional centred students can communicate and interact with dual students, due to their semantic proximity. On the contrary those two groups keep larger distances between them, and presumably the students belonging to such distant groups would have more difficulties in communicating and interacting with each other.

Now, let us see who are the students outside their 'natural' semantic space. They are freak students referred to above as belonging to a specific pattern of self-perception, in accordance with our classification, but located in an area dominated by a different pattern. We shall concentrate on students number 9, 68, 69 and 70. Student number 9 is a 13 years old boy, from Herrera School. His father is a business man, his mother is, in his own words "studying because she is on the dole" (she is registered in further education). He was very enthusiastic about the essay and asked for more time to finish it. His essay is quite different from most of the others. It is a very fantastic and optimistic essay, in the style of Star Wars. He sees himself in a futuristic science-fiction world. He feels very much identified with his job -pilot- and the concepts he uses in relation to his job belong to a fantasized world. At the same time he sees himself as a family man, therefore, it is not so surprising to find him in the area of family centred students, since his professional concepts are so idiosyncratic and the categories he shares with other students are related to family life.

Student number 68 is a 14 years old boy from Cortijo school. His father is a film director and his mother is a film actress. His aim is to achieve a balance between all aspects of life (a rather mature, even philosophical point of view, which is totally uncommon among the students of the sample). He contemplates job and family as complementary and important both for happiness and fulfillment. He looks for "a wife who thinks like me, understands and likes my job (actor and something else)". He is concerned about the role of ethics in life "I'll try to resolve all my business in a clean and proper way". Although he is very much concerned with his professional future,

his approach to it is not common; that means that he has not many categories to share with professional students, but he has nearly all the categories relative to the family sphere to share with family centred students. Consequently he has been attracted to the family area in the plot.

Student 69 is a 13 years old boy, from Cortijo school; his father is a civil engineer, his mother a housewife. He wants to be a professional football player, an army officer and a surgeon. He sees his jobs as a means of providing money for his family —this conception of the own job is typical of family centred students. He contemplates himself in his old age surrounded by grand children, nephews and nieces. In a way he has a self-perception system which is similar to the dual self-perception pattern; consequently, he is topologically close to dual students and attracted towards the family area.

Student number 70 is a 14 years old boy from Cortijo school; his father is a draughtsman, his mother is a housewife. He gives a great importance to his future job, but mainly as a means of maintaining social relationships and as a place where he will be helped as a junior worker and he will help others as a senior. This perception of the job place is unusual in our sample. Family life also has a great importance for him: "At the end of the day I'll come back home very happy because my children are waiting for me, and I'll help them with their homework". He views himself, in his old age, living with one of his sons, happy to be surrounded by grandchildren. All these characteristics give us, again, the image of a boy who shares concepts with both family centred and profession centred students. As his concepts related to profession are not common, whereas those related to family are shared with the family centred students, he is located in the family area.

5.4. Social-class in the categories plot.

References to social class background —although they can be misleading because as argued in chapters 1 and 3, they tend to reify the individual who in fact is a self-organizing, 'novelty' producing reality, are also useful to substantiate the patterns.

Using a reductionist two fold (middle/working class) split, it can be said that the family centred pattern is a self-perception pattern which is typical of working-class backgrounds. Whereas the profession centred pattern typically is a middle class one, although some students coming from unprivileged backgrounds are located in it. The dual pattern includes middle class girls but it also includes working class girls, reflecting the tensions of a substantial upwardly mobile sector of this class. From the point of view of class background there is no obvious difference between yuppie and progressive subpatterns; both are composed mainly by students having a privileged background.

In the analysis I avoid the categorization of individuals by social class, but the social categories naturally appeared from the subjects. Without entering here in the debate about "emic or indigenous rather than etic or imposed" (Krippendorf (1980: 157) or in the challenge presented by Coxon et others in *Images of Social Stratification*, it can be argued that some sort of social classification comes out of the "mental map of the social scene"¹² of the students when they try to portray for us their view of their own future. In fact relating students' social backgrounds and students' self-perceptions systems, it is possible not only to refer to social class but also to social mobility.

5.4.1. Self-perception patterns and social backgrounds.

As argued above, in a rather simplistic way, specific patterns of self-perception are more likely to be prevalent among individuals having certain social backgrounds. However these obvious connections require a careful interpretation in order to avoid the sort of misplaced causal thinking that understands social processes in a reductionistic, 'objectivistic' way. Chapter 3 dealt with some of these issues from a general theoretic perspective. Here, and before I comment on the relationships between the subjects of this research and their respective social backgrounds, I shall point to some presuppositions that will guide the interpretation of those relationships.

It can be argued that any individual self-perception system develops within a social frame which exists a priori with respect to that system. Now

the relationships between individual self-perception systems and their peculiar social backgrounds, are to some extent, similar to the relations that an organism maintains with the ecological system to which it belongs¹³. It must be noted that ecological systems and organisms are both dynamical systems, they change in time. Individual self-perception systems and their social backgrounds are also dynamic realities.

As in the case of the relationship between organisms and the ecological systems to which they belong, self-perception systems and their respective social backgrounds enter into a complex relation of **co-evolution**. The evolution of an organism is **constrained** by the ecological system which it inhabits. But this ecological environment does not **determine** such evolution. An organism (it's species if not the individual organism) can always find creative, innovative pathways of survival within its environment —which may change in unpredictable directions also. If the characteristics of organisms were determined by the environment, there would be no evolution as we know it: bacteria would still be the highest form of life on Earth. In fact, ecological systems are, to a large extent, the product of the evolution of organisms. These do not just inhabit such systems, they creatively **constitute** them.

What I call the social background appears to be a sort of substantive reality, existing on its own. But in fact that reality is the emergent effect of the concurrent activity of individuals, as an ecological system is the emergent effect of the concurrent activity of organisms. Individuals are the base of the constitution of different social backgrounds, and individuals change them. Certainly, for **any** particular individual her social background appears as something given a priori, although that background is the dynamic reality that emerges from the activity of **many** particular individuals. That a priori appearance of social reality is an effect of considering the behaviour of a single individual, from the outside. When on the contrary we assume a holistic standpoint and take heed of the synergetic effects of the actions of many individuals, social backgrounds do appear as an a posteriori outcome of those actions.

The social background of an individual certainly constrains that individual's self-perception system; but that background does not determine

that system of self-perception. This is a personal creation based upon the individual's requirements and capabilities of self-coherent interaction with the world: constraints do not prevent novelty, but guide it. It would be too easy just to point to the correlations that undoubtedly exist between the social backgrounds of the individuals that we study, and their specific modes of self-perception. Of course those correlations do exist; but the presence of a correlation does not mean that a causal, necessary connection between the entities involved, must be taken for granted. For instance, wearing punk outfits might be positively correlated with having a working class background (whatever the definition of this may be); but trying to establish a causal connection—in any reasonable sense of the concept 'causal connection'—between that background and the use of punk paraphernalia would seem a little far fetched. Because in all probability no imaginable definition of 'working class background' would have been able to imply, a priori, a propensity to wear punk outfits. More likely, punk style is the outcome of a pure act of creation, initiated and processed in—hence, constrained by—a given social milieu. We can understand why punk style was originated in a particular milieu, but any attempt to explain causally its appearance would be desperately pedantic, unless we just equate the concept of causal connection to the concept of statistical correlation. But this would mean a complete dissolution à la Hume¹⁴ of the very concept of causality.

Therefore, the correlations that undoubtedly exist between social backgrounds and modes of self-perception do not entail that those backgrounds act as the cause of such modes. Rather, such backgrounds are a part (a substantial part) of the raw materials that the individuals use to create their self-coherent vision of reality. In general, but specifically within our society, individuals have the capability, in principle, of jumping out of their immediate social frame. Humans are always trying to enlarge their landscape of meanings. Anything strange can be perceived as a danger but also as a challenge and an opportunity. Individuals belonging to a specific social group are always looking to the others—privileged groups look askance at unprivileged ones, the latter peep at the grand life style of their betters. That is the way, for instance, that the luxury world of some soap operas becomes a part of the 'weltanschauung' of countless unprivileged people around the world.

Although the 'objective' situation of a social group, remains apparently unchanged, the very fact of that group accessing to new 'subjective' situations—in other words, to new information—dramatically modifies that 'objective' situation. For instance, Western T.V images reaching the countries of Eastern Europe have probably done more to annihilate the 'soviet style of life' than all the diplomatic skirmishes of the cold war¹⁵.

The purpose of this thesis is to find some patterns of self-perception which are present among a group of individuals; it is not to find alleged causal correlations between those patterns and more or less well defined types of social backgrounds. The reason why this research does not try to establish cause-effect relationships between those social backgrounds and the corresponding individuals relies on an skeptical view about the epistemological legitimacy of any attempt to relate causally 'objective' social backgrounds—definitions which are, always debatable—with social phenomena occurring at the individual's level (Gambetta, 1987: 4).

In sociological research the status of the so called 'cause-effect analysis' is usually regarded as higher than that of 'descriptive analysis'. But this stance is the result of assuming an epistemological paradigm which may be termed 'classic'; it is the nomothetic paradigm represented by classical physics. Often this paradigm does seem to work. But it works on the basis of a fundamental opacity: its main tools are statistical correlations which relate indexes supposedly representing conceptual variables. This outlook faces at least two kind of problems: first, the connexion between the indexes and the theoretic variables is always debatable. Second, those variables—and the corresponding indexes which implement them—must remain unchanged all throughout the analysis, otherwise the statistical treatment of the data becomes impossible. This means that new variables cannot appear, initial variables cannot disappear, and no variable can develop new meanings¹⁶. In sum, this classic outlook assume the postulate of distinctional closure. Hence, the qualitative change in contents and relations which is a basic feature of social processes is utterly missed.

In the light of the heuristic model proposed, neither individuals nor social backgrounds are distinctionally closed systems. On the contrary, they

are informationally open systems —a concept put forward in chapter 3. Consequently the classical, nomothetic paradigm of social research, seems —from the perspective presented here— rather inadequate to mirror social processes characterized by qualitative dynamics in which new meanings are in the making. Due to the fact that cause-effect analyses are usually framed within that nomothetic paradigm, they are as questionable as the latter: such analyses would explain everything, except how novelty arises in social realities. Therefore I shall avoid any attempt to causally relate the available individuals' background information that is to the specific self-perception patterns shown by these individuals.

However although I feel rather skeptical about the possibility of establishing causal relationships —in a classical sense of the word 'causal'— between social backgrounds and self-perception systems, I believe that some other sort of relation does exist: I call **structural coupling** this relation¹⁷. Structural coupling may be considered as a weak, non classical variety of causal relationship. The presence of a condition of structural coupling between two or more realities does not imply the existence of a causal relationship between these realities, at least in the strong, classical sense. For instance, there can be a predator/prey structural coupling between foxes and hens, but this coupling does not mean that hens cause foxes. Suppose hens disappear: foxes would probably find an alternative way of survival, say becoming scavengers. Certainly one can say that hens 'cause' foxes, in a particularly weak sense of the word 'cause'. Now this weak sense of causality does not lend itself to nomothetic treatment.

The relation between self-perception systems and social backgrounds can be considered through the epistemological model of structural coupling, and not through the classical cause-effect paradigm. From this point of view the self-perception systems are somehow structurally coupled with their social backgrounds; these backgrounds constrain the corresponding self-perception systems, but the latter creatively navigate through those constraints and generate a renewed world of meanings beyond them. This is the way in which social meanings evolve, by means of the individuals continuously transcending their own backgrounds¹⁸.

The constraints that social background impose upon the self-perception system of the individuals becomes manifest when we considered some data: in the two middle class schools there are 19 and 16 students belonging to the professional patterns respectively, whereas in each of the two working class schools there are only 5 and 6 professional students. In the most privileged school (Herrera), no student shows a family centred self-perception system; in this school, even the few students with a working class background, have a dual self-perception system. On the contrary, in the two working class schools (Zaragueta and Picasso) there are 13 and 7 students respectively with a family centred self-perception system. Although these figures strongly support the idea that environment constrains the process of generation by the individuals of their social self-perception system, they also point to the ability of some individuals to produce a self-perception system which goes beyond the immediate horizon of those environments. There are four individuals in each working class school who face life from a professional outlook (and only one of them in each school have one parent with a university degree). Most important, 15 students from the two working class schools have a dual self-perception system (five of them from Zaragueta school and 10 from Picasso school).

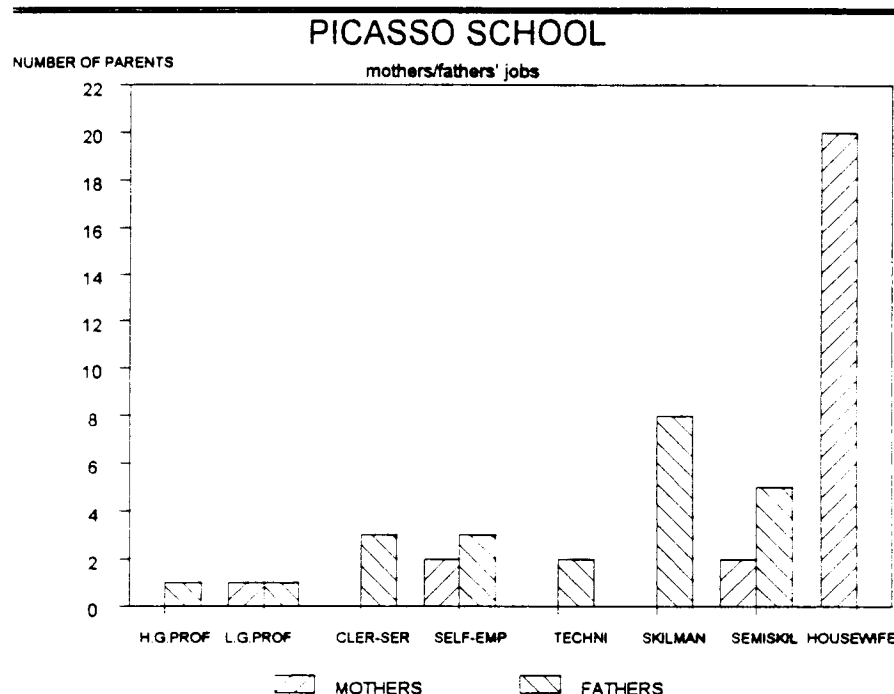
5.4.2. Students' social background.

In this research I have considered as background information the following data: the level of studies of the students' parents (only for two of the four schools), their occupations, and some general characteristics of the area in which they live (house prices and level of social equipment). Information about their parents' occupation was requested from the students. This information was compared with the school records and it was coincident in most cases; differences were attributable to occupational mobility. Only two of the four schools kept records about parental level of education. Regarding those two schools (Herrera and Picasso) which kept records on this issue, a strong correlation could be established between the educational level of the parents and their occupations. This correlation is more difficult to establish in the case of mothers whose occupation is housewife. On the one hand, most housewife mothers from Picasso School (in the most unprivileged area) have just primary studies, some of them incomplete. On the other hand, most

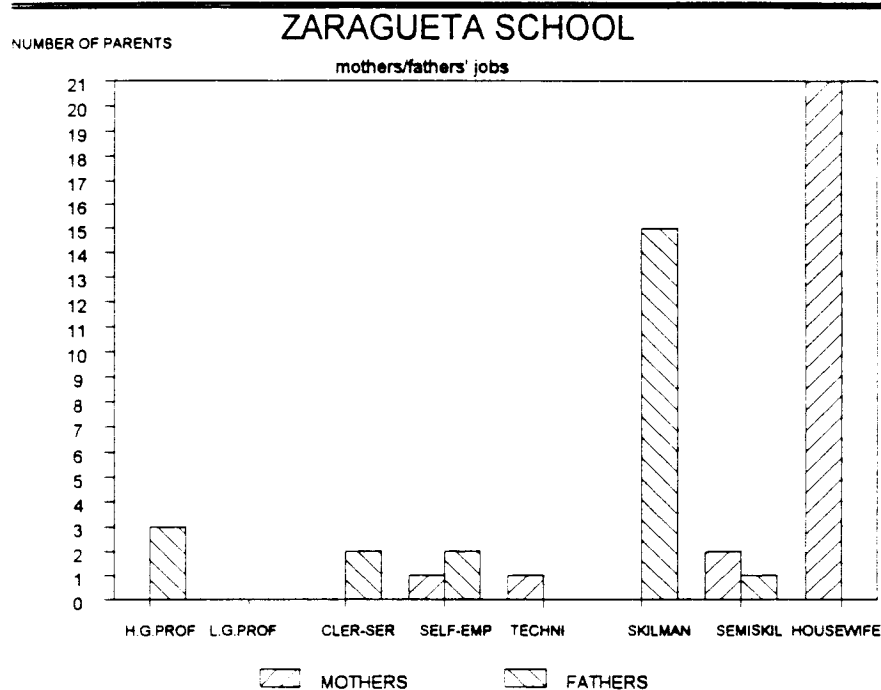
housewife mothers from Herrera School (in the most privileged area) had attend secondary school; three of them have university degrees and only two had attended just primary school.

5.4.3. Parental occupations

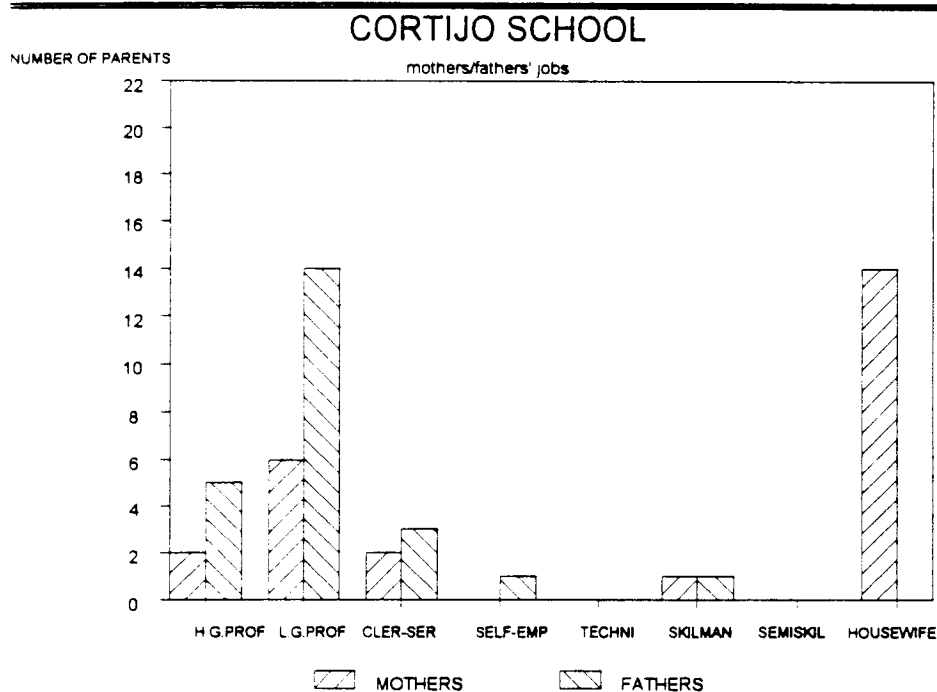
Table I



In this analysis I shall assume the views held by Halsey, Health and Ridge in relation to occupational classification (Halsey *et al.* 1980:17). Halsey *et al.* follow the schema used by Goldthorpe in his **Social Mobility and Class Structure**, with some differences. I shall follow Halsey's schema introducing some changes as well, in order to adapt it to the characteristics of the Spanish occupational activities and to the fact that I consider mothers as well as fathers occupations, whereas Halsey *et al.*, only contemplate fathers' occupations.

Table II

I keep the three main classes classification (service, intermediate and working), as Halsey *et al.* do. I have modified the three categories of working class proposed by Halsey *et al.* As all parents in my sample are urban we can discard the category 'agricultural workers and smallholder'. However due to the nature of our sample we need to include the category 'unemployed' and the category 'housewife' for mothers. Therefore the social-class classification that will be used in this research appears as follows:

Table III

1. SERVICE CLASS

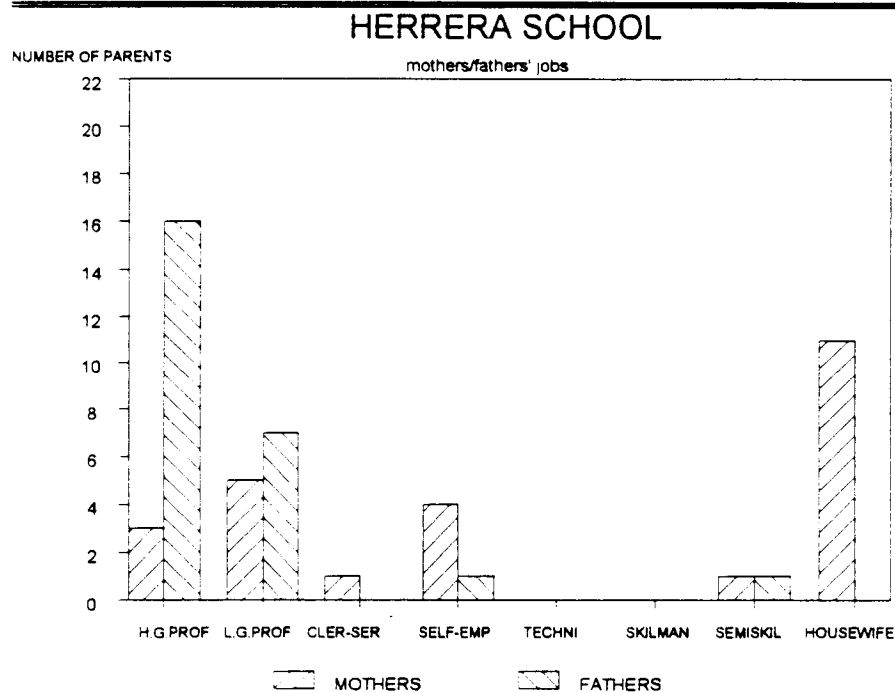
- I. Higher-grade professionals, administrators, managers and proprietors.
- II. Lower-grade professionals, administrators and managers. Supervisors, and higher-grade technicians.

2. INTERMEDIATE CLASS

- III. Clerical, sales and rank-and-file service workers.
- IV. Small proprietors and self-employed artisans.
- V. Lower-grade technicians and foremen.

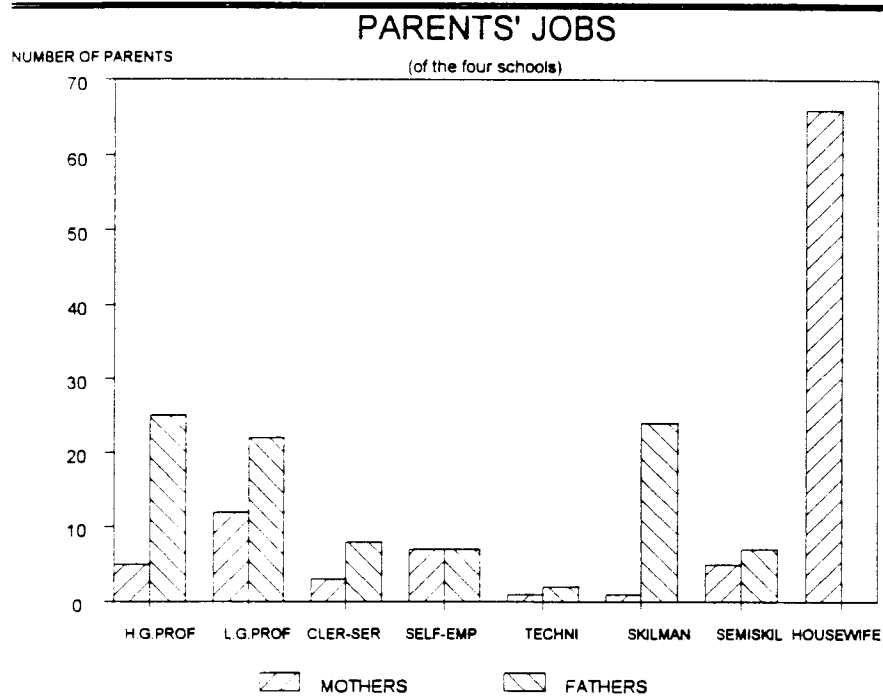
3. WORKING CLASS

- VI. Skilled manual workers in industry.
- VII. Unskilled manual workers in industry.
- VIII. Unemployed
- IX. Housewives.

Table IV

The range of parental occupations varies from a majority of manual workers (unskilled and skilled) among fathers in Picasso and Zaragueta schools, to a majority of fathers belonging to the service class in Cortijo and Herrera schools. See tables I to V). Mothers' occupations are dominated by the category 'housewife' in the four schools, although in Cortijo and Herrera schools mothers in the category 'service' have a larger representation. (See table V).

Table V



NOTES TO CHAPTER 5

¹ Joseph P. Forgas **Multidimensional Scaling: a discovery method in social psychology** in G.P. Ginsburg (ed), "Emerging Strategies in Social Psychological Research", 1979, pg. 253, reprinted in P.M.Davies & A.P.M.Coxon "Key Texts in Multidimensional Scaling" pg. 144.

² Quoted in Borg, I. 1977 pp. 225.

³
$$\text{Jaccard} = \frac{a}{a + b + c}$$

Jaccard index measures the similarity relationship between pairs of objects with respect to a set of characteristics. When we consider the relationship between any two objects through just one characteristic, $a = b = c = 0$ that neither of the two objects posses that characteristic. In that case $a+b+c = 0$ and consequently the value of the Jaccard index will be $0/0$, that is it will be undefined.

⁴ It must be noted that the paradox is not in the ALSCAL procedure, it arises from the characteristics of the connectivities established previously.

⁵ I must express my gratitude to Dr. Rian Vogelesang from Leiden University, who introduce me to the developers of Anacord and Homals programs, who offer me the use of these programs before being marketed.

⁶ It must be taken into account that the actual disposition of the two axes is arbitrary. They only provide a convenient framework to locate the points. However the axes may have an interpretation in qualitative terms, as they reflect some sort of symmetry on the plot which points to some structure in reality.

⁷ The **representation** should not be taken as the fact itself. In this case the facts (the socio-connection between concepts) are represented, by convention, through the JACCARD and ALSCAL algorithms. Any representation should show, through a convention, and always in an approximate way, some essential structure of the facts, but it is not that structure.

⁸ In this analysis when a category is mentioned for the first time, its abscissa/ordinate value will be added between brackets. Each item is given only one value because we are describing one axis at a time.

⁹ See Roger Penrose (1989) arguments about the non-algorithmic nature of believing and thinking.

¹⁰ There is an extensive literature about the interpretation of plots according to the characteristics of their shapes and the distances between their points (Kendal, 1971 describes the 'horseshoe' shape; Shepard 1974, describes C-shape and S-shape). However, we shall leave the interpretation at the present level, which is as significant and stable as necessary for the aims of this research.

¹¹ As was done when analyzing the categories plot, the notation for the coordinates of a point is written (in this case the abscissa value only), between brackets, after the number of the corresponding student.

¹² F.M. Martin (1954: 58-9) quoted by Coxon *et al.* 1986: 7.

¹³ This ecological metaphor is quite different from the organismic metaphor used by Spencer and Parsons among others. In fact Ecology is the science that transcends the organismic outlook in biology.

¹⁴ According to Hume the idea of causality implies that "two objects are necessarily connected together" (1987: 155).

¹⁵ See Hegel's explanation of the formation of the self-consciousness. (1973: 120).

¹⁶ It can be explained through Heylighen's notion of 'relational closure' that he understands as an internal criterion of stability of a system. He argues: "The relational closure of a system can be defined as the **internal invariance of a distinction** (or distinction system) defining the system" (1990: 6).

¹⁷ Although the concept of **structural coupling** was first defined by Maturana (Maturana, 1974:319-320), here it will be quoted Varela's development of the concept: "**the continued interactions of a structurally plastic system in an environment with recurrent perturbations will produce a continual selection of the system's structure.** This structure will determine, on the one hand, the state of the system and its domain of allowable perturbations, and on the other hand will allow the system to operate in an environment without disintegration. We refer to this process as **structural coupling** (Maturana 1975). If we can consider the system's environment also as a structurally plastic system, then the system and the environment will have an interlocked history of structural transformations, selecting each other's trajectories". VARELA, F. (1979:33).

¹⁸ The relation between individual self-perception systems and individual social background presented here is similar to that established by W. Hollway (1984: 227) when she studies the production of subjectivity related to gender difference. For her "every practice is a **production**". She distinguishes between 'reproduction' (without the hyphen): the social practice is so constrained that serves to the maintenance of gender difference and 're-production': the production of new meanings leading to changed practices. In her view this personal, subjective production of new meanings explains why "femininity and masculinity cannot be taken as fixed features" (Ibid 228).

*Chapter 6.***Interpretive Analysis**

The sociosemantic analysis developed in the last two chapters involves a process of deconstruction/reconstruction¹ of the information provided by the students in their essays. The deconstruction phase was done by means of the content analysis which isolated at a fairly high level of abstraction, the conceptual components of those essays.

The reconstruction phase is represented by the process leading to obtaining the sociosemantic plots. However, that reconstruction cannot reproduce all the information present in the original source of data (the essays), because such information has been drastically reduced through the conceptual homologation that the phase of content analysis entails. Any direct, textual, self-expression is always richer in meaning than any homogenizing translation of that expression. On the other hand, only the loss of some aspects of the original information makes it possible to reconstruct the other, deeper aspects, in a revealing way.

However, once sociosemantic analysis has implemented that reconstruction of a part of the original information embodied in the essays, it is possible to go back to this full information in order to establish a second and more detailed level of interpretation. In reality those two levels of interpretation (sociosemantic plots/individual essays) should clarify each other through a cyclic process of a hermeneutic kind.

In general, the sociosemantic level of analysis reveals macro-structures which are implicit in the total information provided by the whole set of texts. Those structures are not detectable in any of the individual texts, but appear as

a result of the cooperative interaction between those texts. The sociosemantic level of analysis guides and justifies, through those macro-structures which it reveals, the intuitive interpretation of the original texts; in turn that interpretation helps to make full sense of the stylized information that the sociosemantic plots represent².

The purpose of this chapter is to present a full interpretive analysis of the texts. This analysis will be guided and justified by the previous sociosemantic analysis, which in turn will be clarified by the intuitive, interpretive, reading of the texts.

6.1. A General view of the three Self-perception patterns.

The sociosemantic analysis outlined in the previous chapter detected three self-perception patterns: a **profession-centred self-perception pattern** (**professional pattern** for short), a **family-centred self-perception pattern** (**family pattern**) and a **dual (family and profession) self-perception pattern** (**dual pattern**) (see figures 5 and 9). When we go back to the students' individual texts, these patterns are both confirmed and semantically enriched:

i) a large group of students appear to have their self-perception centred in on their future career life³ and the issues related to or derived from that expected future.

ii) another group of students appear to focus their expectations on family related issues; they have a self-perception according to which their self-fulfillment depends on their future family life.

iii) finally, there is a third group of students who show a bi-polar field of interests; they have a self-perception organized around both profession and family expectations. For them, family life and professional life are equally important domains of their self-perception systems. The profession-centred pattern can be further divided into two subpatterns or subgroups, as suggested in Chapter 5: the **yuppie subpattern** (which includes the possibility of having

an average-size family) and the **progressive subpattern** (which rejects the possibility of having a family of the standard type) (see figure 6).

When we look at the whole of the essays from a comprehensive perspective, we find that the discourse of the students reveal that their self-perception turns around two main poles of attraction⁴: family life and professional life. The majority of students see their life as related to those two poles of attraction with a different degree of attachment towards one or the other; some of them seem to be positioned at an equidistant point between both of them. I consider the general notions of 'family life' and 'professional life' as poles of attraction because it can be argued that they function like the centroids identified in catastrophe theory, which attract around them most of the other categories used by the students. In fact the tension between 'family life' and 'professional life' influences the relationship between most of the other categories used by each individual subject.

The boundaries between the three patterns are permeable and unclear, with respect to both their conceptual definition (the set of categories describing the patterns, see figure 5) and their social definition (the individuals belonging to each pattern, see figure 8). An individual can be considered as belonging to a pattern but at the same time she can share some elements (categories) characteristic of the others. When we describe each self-perception pattern in terms of the categories to which the individuals' discourse was compressed in order to implement the sociosemantic analysis, we can define these three patterns as three intersecting sets (see figure 5). The intersection areas are composed of those concepts shared by several patterns.

In general, each individual essay appears closer to one of those patterns than to the others. The difficulty of attaching individual essays to one particular pattern appears only in a few cases, although most essays do not show all the traits which characterize their respective pattern.

This does not come as a surprise: when we try to classify empirical entities, the limits of the groupings become unclear sometimes, even paradoxical. In our sample, most of the students are oriented towards one of

the two main symbolic attractors (family and profession), —or towards both of them—, but at the same time they possess other intentional dimensions too.

This fact, enriches each self-perception system, but on the other hand, makes any attempt to classify those systems more complex. This is why we would prefer to describe the patterns as fuzzy sets, as understood in fuzzy sets theory, better than as clear cut, intersecting sets. This characteristic lack of clear cut limits can be visualized in the coloured sociosemantic plot of individuals (figure 8). In this plot some green points (corresponding to students of the professional pattern) are closer to some purple points (students of the dual pattern), or even to red points (students of the family pattern), than to other green points. In fact some green points are located in the red area, and there are transitions or fuzzy regions between the three areas occupied respectively by green, purple and red points. Clearly the patterns overlap, to some extent, both socially and semantically. A particular pattern cannot fully include, nor represent all the facets of a person. Patterns are just abstract representations of the commonality of a group of subjects, and the students as multidimensional individuals, although predominantly attracted by a particular sociosemantic dimension, are multidimensional individuals, who also perceive themselves through some other facets that modulate the influence of that main attractor.

When trying to assign patterns to students, the researcher faces a dilemma. On the one hand, the professional self-perception pattern seems to attract more students than any other (see details in the next section). But on the other hand, 'family life' appears as the most powerful pole of attraction. The notion of 'family life' does not correspond to any particular category. It may be viewed as a super-category, which include several specific categories, and above all the categories 'marriage' and 'to have children'. These two categories function as the hallmark of the super-category 'family life'. Significantly, they are the most widely used categories: 77 students want to marry (two of them twice), and 71 want to have children.

There is a third category, strongly related to those two: 'to have family ties in old age'. It is used by 47 students. The number of students using this category is very large, considering the fact that only five categories are used

by more than 50 students. However those three 'family related categories', although essential to detect a family-centred self-perception, neither exhaustively define the family pattern nor are exclusive of it. They are used by individuals belonging to the three patterns.

There is some evidence to suggest that what defines the kind of self-perception system of an individual is not merely the fact of having a family, being married and having children. It is the individuals' relationship to their family life, their role in it, or maybe their rejection of it.

The important aspect is the relation that the individual establishes between family-related concepts and work-related concepts, and between these two sorts of concepts and any other kind of concepts (studies, leisure, etc.). This relation defines the sort of self-perception that each individual has, and therefore it determines the pattern to which each individual belongs. In this respect, what matters is the structure of the relationship between all meaningful concepts present in the discourse of any individual subject.

In order to include a student in a pattern it is necessary not only to consider her particular list of categories, but also to study her whole essay carefully looking for the relations between those categories, order to establish the symbolic attractors at work. Only after that careful consideration is the researcher in a position to classify each student, reducing to a minimum the possibilities of misjudgment. In this process the researcher may find students who use nearly the same list of concepts but belong to different patterns. In such cases the lists of concepts of those students are almost equal; they only differ in one or two categories but this is enough for the structure of the relationship between the categories to change from one subject to the other, hence defining different systems. This phenomenon is also represented in the sociosemantic plot of individuals (figure 8). For instance the green points that 'invade' the red area, stand for students who share most of their categories with individuals belonging to the family pattern. However those students contemplate their future life as centred around their job. Their family related concepts, formally equal to those used by family-centred students, take on a different meaning when they are seen in their personal context (the individual essay)⁵.

This holistic kind of semantic interpretation cannot be done by the computer procedure; the reconstruction of meaning needs to be done by the researcher herself, who should go back to the original information (the texts), hence closing the hermeneutic cycle.

Systems of self-perception are dynamic: they change by necessity (as any other kind of organizationally closed and informationally open system) along the time due to their interaction with other individuals, and due to their own self-reflexion (Pask, G. 1981). The fuzzy boundaries between the patterns—the fact that there are concepts shared by several of them—, make possible the movement of individuals from one pattern to another. This is specially so when the subjects are in a dynamic period of their lives such as adolescence (Erickson, E. 1959; Asubel, 1971, 1977). Any person is, —to some extent— subject to the influence of her environment of social interaction, and adolescents are in general more open to change (Havighurst and Taba, 1963) —they are less constrained by past experiences— than adult people. A great deal of the contents they use to construct an image of their present and future life is acquired through a second hand experience: the way they see those contents is strongly influenced by the attitudes of their parents, other reference adults or their peers. Very often this experience is quite restricted, and the youngsters' self-perception can evolve in unexpected directions, as their social knowledge (second hand knowledge, practical or theoretical) becomes enlarged. Nowadays, immediate interaction —centred on family life— is only a part of the interaction environment: the mass media and the education system itself provide additional sources of social information.

Considering the recent changes in Spanish society⁶, there is some evidence to suggest that the shift from one pattern to another is not equally probable in all directions. The family pattern is the most traditional of all, for that reason we should not be surprised that the students assigned to this pattern seem incapable of envisaging other patterns in their social horizon. On the contrary, dual and professional students include the family pattern in their horizon of social experience: they know it, but they are not specially attached to it, and some of them clearly reject it. This fact suggest that, in general, it is easier to change from a family self-perception pattern to any of the other two than the other way round.

In Spain the percentage of women having a family and a paid job is still relatively low, when compared to other Western countries⁷. Therefore maybe it is too early to detect the presence of this reluctance of women to assume an unmitigated professional outlook. Consequently, in the short term at least, we can foresee more youngsters moving from the family pattern either to the professional or dual patterns, than the other way round.

The characteristic openness of the individuals' self-perception systems is the fact that makes the investigation of those systems so relevant for educational purposes. In reality the very idea of education presupposes some sort of openness in the subjects to be educated. If the subjects of education lacked in internal potentialities and remained closed to any external influence capable of triggering some of those potentialities, education would be a vain endeavour. When we consider a self-perception system as informationally open and yet organizationally closed, we are assuming that there are internal constraints —individuals are never a *tabula rasa*— but also possibilities of innovation and change. Education must foster and guide the individual's innovation space always bearing in mind the constraints (both social and biological) which are operating on that individual. From that point of view the aims of education could be threefold:

First to identify the patterns of self-perception which are present among the students.

Second, to design development patterns for those self-perception patterns. This development patterns would allow the students to make sense of a corresponding educational offer, carefully designed to fit both social demands and students' characteristics. Of course such development patterns would have connections between them allowing the students 'to change track'.

Third, the educational environment must provide new ways of socialization (of social interaction), which should be introduced in the school practices in order to enable the students to share views about their future in a constructive way (thus giving plausibility to alternative patterns of that future).

6.2. A Comparative analysis of several related studies.

In Spain and over the last three decades, several authors carried out studies on the basis of essays prompted by a question equal or similar to the one I used in the present research.

In 1969 Victor Perez Diaz published, as a part of a wider research, an analysis of 36 essays collected in the mid-sixties and written by children aged 8 to 14 years old, under the title "Write in approximately two pages, how you see your future from now on, what you expect from it, how you wish it to be, which are your projects. Start in the immediate future and go on writing about successive periods of your adult life, your middle age and your old age. Imagine you are going to live until you are 70 years old" (Pérez Díaz V., 1969: 201-212). These children were students from a purely rural area of Old Castile. (The second author to be considered, Enrique Gaston (1978:56) characterizes this area as 'economically backwards'). The aim of Perez Diaz's study was regional planning, and specifically to establish the relationship between emigration and social change in that particular part of Spain, Tierra de Campos.

In 1973 Enrique Gaston conducted a research, on the scale of a whole province, on adolescents' expectations. The subjects of the survey were 13-14 years old students from state and private schools of the province of Zaragoza. He obtained 1302 essays, written about the same topic as the one used by Perez Diaz, but adding a further question to it: "Where are you thinking to live?". As in the case of Perez Diaz's survey, the main purpose of this research was regional planning, and consequently Gaston was particularly interested in the phenomenon of emigration.

In 1983 I carried out a small research (Díaz Martínez, C., 1983: 127-129) on the basis of 31 essays on the same topic as Gaston's survey. They were written by a group of 31 students aged 11 to 14 from Ponferrada (León province). The aim of the research was to define the expectations of the adolescents of the area, focusing on their work expectations and family life.

Some prior remarks will be useful in order to compare meaningfully the results of these three studies with those of the present research. First of all the pragmatic aim of the surveys carried out by Perez Diaz and Gaston studies focuses on the phenomenon of emigration. In fact the importance of this phenomenon was paramount during the 1960's and early 1970's, as I shall explain later. Additionally and on a theoretical level, both studies use the concepts of expectations/aspirations as primitive notions, which are not submitted to further analysis, whereas the present research integrates those concepts within a wider theoretical construct, the notion of self-perception system.

With respect to the universe of each study there are also significant differences. Perez Diaz's survey considers a typically rural, backwards area (he obtained his data from the schools of two small villages). Gaston's research covered a mixed population, both rural and urban. He collected essays from schools in villages, small towns, and the capital of the province. My own research in 1983 also referred to a mixed population, because although the essays came from an urban school, the catchment area of this school includes not only its immediately urban surroundings but also some rural villages around.

Last, but not least, these four studies which we are about to compare, belong to quite different stages of the recent evolution of Spanish society, ranging from the mid 1960's to the late 1980's. As we shall see, the social attitudes of Spanish society underwent substantial changes over that period of time. By comparing these three studies and the present one, we can follow some of the basic trends of this evolution. In a way, the older studies help to explain the newer developments and the more recent studies allow us to reinterpret the older ones with the benefit of hindsight.

6.3. The hermeneutic circle: concrete and abstract levels of interpretation.

The aim of any interpretive analysis is to understand the concrete realities that it examines. However in order to achieve this aim a process of interpretation must use abstraction as a tool. Specific realities must be related

in order to become mutually intelligible, and this relationship can only be effectively achieved through abstraction.

When considered as an individual self-perception system, each individual subject is a world, a coherent universe of intentional contents. Those universes are unique, no one is identical to another. And yet, they can communicate. The phenomenon of communication (see Chap. 2.7) entails a disturbing paradox: to make up sense, a subject must close her world of meanings⁸ in an idiosyncratic way; but in order to communicate with other people an individual subject must develop her peculiar universe of meaning in resonance⁹ with other people's universes. Strictly speaking individual subjects cannot directly communicate the 'inner sense' underlying their use of meanings. That inner sense provides each specific concept used by the individual, with a peculiar, 'internal', meaning. The specification of that internal or subjective meaning of each concept is given by the **other** concepts used by the individual. As in the case of a phonological system each element of an individual's subjective system of meanings defines its meaning in contrast with the other elements. For instance, suppose these two sets of meanings correspond to two different individuals.

Individual A: 'work', 'continue studies', 'specified university career', 'job fulfillment'.

Individual B: 'work', 'fear of unemployment', 'family fulfillment', 'dependent old age'.

Clearly the 'subjective meaning' of the concept **work** is very different in these two cases. Because the contrasting concepts are completely different. This 'subjective meaning' can be referred to, in more technical terms, as the 'subjective **connotation**' or 'subjective **intension**' of each concept.

There is evidence to suggest that individuals are unique self-perception systems, even after the process of content analysis which reduces their specific meanings to a general list of categories. This evidence becomes clear when we compare the particular sets of such categories that they use: in our sample each one is different. This fact shows that —according to the

previous definition of 'subjective meaning'— each concept has a different subjective meaning for each of its users.

The paradox of communication lies in the fact that individuals have different subjective meanings and yet they can usually understand each other. People achieve that difficult task of understanding each other, starting from their idiosyncratic worlds of meanings, by **representing** the others' set of meanings in their own semantic universes (See Chap. 2.7). These mutual mappings of individual subjective meanings into the specific world of meanings of each individual, generates a new dimension of meaning which I shall call **intersubjective meaning**. For instance consider concepts such as 'to have a good job', and 'to have fun'. Clearly we all have specific, subjective, **personal** meanings attached to these concepts. Probably **my** personal ideas of 'job' and 'fun' are substantially different from my neighbour's personal ideas about those concepts. In that sense such concepts have different subjective (personal) meanings. Now suppose I know that my neighbour is looking for a good job; automatically I develop a representation of what a good job can be for my neighbour. In this way I construct an intersubjective meaning of the concept 'good job', a meaning which I can communicate with my neighbour. Intersubjective meaning arises from that hypothetical representation of other people's meanings in our own universe of meaning. Of course the process can only work because it is a reciprocal one.

It can be argued that viable interaction between individuals presupposes a common basis of intersubjective meanings, that is to say, each individual involved in a process of interaction must reproduce an adequate version of the relevant subjective meanings corresponding to the other individuals engaged in that interaction. Thus intersubjective meaning is created in this process of 'resonance' between mutual representations of individual subjective meanings.

Consequently, there is no transmigration of meaning between souls, but reciprocal construction of meaning; mutual development of mutual representations of the subjectivities involved in a process of interaction. In that way we do not communicate with the other, but with our representation of the other, and this communication is effective when such representation generates

viable behavioural couplings with this other. In Maturana words languaging becomes "consensual coordination of consensual coordination of actions" (Maturana, H., 1991:46-47).

From this point of view, subjective meaning and intersubjective meaning are not separate realities, they produce and reproduce each other: subjective meaning is at the basis of our intersubjective constructions of meaning; but also the intersubjective meanings that we develop modify our own subjective meanings. In other words, the relationship between subjective and intersubjective meaning is dialectical: we would only be able to **think** our own subjective meanings against a background of intersubjective meanings.

According to this outlook meaning is an intrinsically relational, social concept; we should not write, in general, of **the meaning of concept A**, but of **the meaning of concept A to base {x,y,...}**, (being x,y,... individuals who share—and in this sharing constitute—an specific intersubjective meaning of concept A). For instance, the meaning of the word 'friendship' (or better, the meaning of the concept evoked by that word) is different depending on the specific people who are communicating through that word (the meaning of friendship is different when the people who communicate are twelve years old, and when these people are a couple of devious politicians). From a social perspective, a word primarily refers to the behavioural coupling that we are prepared to assume in order to realize its intersubjective meaning, and this behavioural coupling varies according to the specific people involved in it¹⁰.

According to von Foerster's view (1991a:63-75) in a process of social research, meaning is produced in the relationship established between the researcher and the subjects whom this researcher examines. Thus meaning is generated to base **a,x**, being **a** an interpretative constant corresponding to the researcher, and **x** a variable representing any subject of the research. Of course, the researcher can consider her relationship to the subjects not just one by one, but in groups; for instance, she may contemplate meanings to base **{a,x,y,z,...}**. When the researcher considers the subjects of the present research individually (to base **a,x**), they will appear as individual self-perception systems. And when the researcher contemplates groups of individuals, these individuals will appear as specific self-perception patterns.

When assuming an hermeneutic outlook, the researcher must tune her sociological insight to the data, trying to structure those data by means of different and yet coherent levels of analysis. For the researcher the notion of self-perception pattern is a way to make sense of the relations between individual data provided by a group of different subjects. This activity of 'making sense' defines the group. One may be tempted to think that there could be, in principle, as many patterns of self-perception as groupings of subjects are possible, but in fact only a few of those groupings 'make sense'; that is to say, only some of them offer a meaningful Gestalt to the researcher.

Patterns can be considered as abstract entities. It is the researcher who abstracts these entities from the data; but this abstraction cannot be done in any possible way, haphazardly. It presupposes an underlying meaningful gestalt (we cannot select data from a wider sample unless we have some sort of meaningful criterium to do the selection).

What kind of Gestalten defines our self-perception patterns? It is not an analytical criterion; we are not interested in grouping people by looking at their features, considered one by one. This criterion would generate as many groups as features are considered; this is the characteristic criterion of the 'distributive paradigm' (Ibañez, J., 1985:203-206) of social research. Our criterion would rather be a synthetic, structural one: it is based on the 'family resemblances' of whole individual sets of data—this point of view was at the basis of the previous sociosemantic analysis—. The researcher contemplates those individual sets of data as coherent unities and tries to sort them, preserving that coherence at a higher level of abstraction. This requirement of coherence drastically reduces the number of abstract patterns that the researcher can generate from the individual sets of data.

In that sense the abstract entities that I call self-perception patterns act as ideal attractors (Gleik, J., 1987) of the individual self-perception systems. In a sense they are sorting procedures. But they are more than that, they provide a frame of reinterpreting individual self-perception systems synergetically, because each individual system clarifies the others belonging to the same pattern, specially those closer to it.

The relation between individual self-perception systems and patterns of self-perception generates several, interrelated, hermeneutic circles.

First, the interpretative circle connecting each individual system and its corresponding pattern: the system validates/invalidates the pattern and the pattern clarifies the system.

Second, the interpretative circle which connects the individual systems belonging to a pattern, through that pattern: the systems clarify each other as specific realizations of the pattern.

And third, the interpretative circle connecting different patterns through individual systems: in fact systems, specifically those that do not fit easily into any of the proposed patterns, act as destabilizing elements which force a reformulation of those patterns. The researcher, by interacting with the data, should connect these hermeneutic circles, which should interact in the course of the interpretative analysis, refining or changing the initial assumptions of the researcher.

6.4. The professional pattern.

The most distinctive characteristic of the individuals included in this pattern is the outstanding importance in their self-perception systems of their professional self-realization. This fact shapes all the other aspects of their conceptual and intentional world: studies, family life, etc.

The profession oriented pattern is the most numerous: it includes 42 students out of a sample of 100. The categories that define the essence of the pattern, such as 'professional career', 'positive old age', 'properties', 'hobbies and pets', 'job fulfillment', 'ambitious' and 'self-confident' are the most common concepts —after the three previously mentioned, 'marry', 'children', and 'family ties in old age'— because some of them are shared by students having other self-perception patterns. The fact that the same set of concepts is so frequently used implies that many individuals use most of the concepts of this set, which entails a great similarity between those individuals, or equivalently a strong

socio-connexion and small socio-distances between them. The concentrated location of those categories can be appreciated in figure 5. In reality they make up most of the 'core' as defined in figure 2.

In this section I shall describe the general features of the pattern, as well as the characteristics of its two subpatterns, yuppie and progressive. Finally, I shall draw some conclusions about the general attitude towards life that this pattern implies.

6.4.1 Towards profession through academic achievement.

All the students included in this pattern view themselves as highly qualified professionals: doctors, journalists, lawyers, pilots, mathematicians, etc. To reach that status they intend to get —at least— an university degree. They are confident about their abilities to do so. Certainly some of the subjects fantasize about less conventional professions: prima ballerina, basketball player, writer, prime minister, etc. But in all this cases there is a second, more realistic prospect which contemplates obtaining an university degree and working in a more conventional profession.

The students belonging to this pattern organize their goals well in advance. They foresee the development of their academic achievements in a pretty accurate way. They have a substantial knowledge of the stages and options of the education system:

"when I'm doing BUP I'll take (the) letters (option) because I want to study journalism" (student 10[7]¹¹).

Obviously, these students have committed a great deal of their interest and thinking to such issues. As said before their idea of professional life dominates all the other activities, and for this reason I shall analyze different aspects of their professional outlook when discussing other aspects of their self-perception.

6.4.2. *The invisibility of the family.*

The individuals who adopt the professional pattern show a surprising autonomy with respect to their parents. The students of the professional pattern do not mention their parents at all, in contrast to the individuals of the family pattern, whose essays are full of references to their parents. The invisibility of parents among students of the professional pattern does not mean that their family environment is unsatisfactory. Nor does it mean that their families do not influence the self-perception of those students. Most probably this influence shows itself in the importance attached by these students to academic and professional achievement. Apparently the family environment of those students seems to further their autonomy as individuals.

Although a good proportion of profession-centred individuals see themselves married and with children, their family life appears to be detached from their objectives of personal self-realization, constituting a secondary domain in relation to their professional life. There are few cases with explicit references to family life; these references appear in essays corresponding to students included in the yuppie subpattern. In those cases family life is conceived of as a feature of old age, when the time of professional life has gone. Usually they mention their family in relation to their grandchildren. They imagine themselves old and being visited by their children and grandchildren or visiting them. This family relationship appears in the plot under the category 'family ties in old age' which was referred to in a previous section as one of the most used categories. They express it as follows:

"I see myself as an old man, with a life behind me, enjoying the money I earned, living a quiet life, seeing my children married, and my grandchildren coming to my house every day" (student 1);

"When I'm old and my children are already independent, I'll live a quiet life with my wife, without worries. If I cannot visit my children, I hope they will visit me" (student 110).

Therefore one can assume that family life is accepted by many of those students as something natural and satisfactory. But it is not the central problem of their lives.

6.4.3. Yuppie subpattern.

All the individuals of the professional pattern share those two characteristics: the centrality of professional life and the invisibility of their parents. However other aspects of their personal outlook differ according to the two basic attitudes, 'yuppie' and 'progressive', that can be detected among them.

The categories constituting the basis of the **yuppie subpattern** are those composing the core shown in figure 2. All students in this subpattern want to continue their studies and expect to have highly qualified jobs. Some examples will make it easier to understand the ethos of this subpattern. For instance student 31[25] says:

"I have a wonderful job because I like it, and you can get good money and have a very good life with it, besides you only work 4 days per week creating computer programs",

or student 45[39] who has no doubts about his professional future:

"In my job I'll try to be at the top, that is to become the manager of a big factory or firm".

Nevertheless the importance given to qualification and the high status of the job is not enough to include an individual in the yuppie subpattern; there are some students who also want to have an university degree and a good job, but they see their job just as a means to earn money in order to guarantee high standards of living for their families. Their reference is the family, not the job; hence they are included in the family pattern. Student 29[23] provides a good example of this

"I'll go to university, when I finish I'll work in an office. I imagine myself when adult with a family at home, working in the same office, but in a higher position. The most interesting thing for me is to give everything to my family, love, money, education... everything".

More than half of the profession-centred students may be considered as belonging to the yuppie subpattern, and all but three are boys. This subpattern fits the male stereotype that defines men by their occupational roles, having a family as a complement which comes second in his social self-definition. For a girl (at least in our sample) to perceive herself as a professional through that pattern is very difficult. Most girls consider that having a family implies some unavoidable duties, such as caring for the children, which will be a handicap to a fully dedicated professional career. As a consequence a majority of girls develop a different sort of discourse and attach themselves to other self-perception patterns.

6.4.4. Progressive subpattern.

The **progressive self-perception subpattern** is a version of the profession-centred self-perception pattern in which girls are predominant¹². This subpattern has a **reactive** character, in a precise sense: those students, mostly girls, who are included in this subpattern strongly react against the feminine stereotype of our cultural tradition. Clearly, these do not want to become like the typical housewife and mother so sympathetically described by girl number 88 —a typical feminine representative of the family pattern—:

"When you're more than 20 years old, you marry, you can have a family and you live like a queen. Your husband goes to work, the kids go to school and you doing the house chores, it's wonderful".

'Progressive' girls not only reject the role of traditional housewife but also the possibility of combining a professional activity with any responsibility as housewife and mother. In fact, this tentative combination is the hallmark of the dual pattern. Significantly most of the mothers of the 'progressive' girls

would belong to the dual pattern: they combine a profession with their family responsibilities. Therefore 'progressive' girls seem to react against this dual pattern that their mothers exemplify.

'Progressive' girls, like the students included in the yuppie subpattern, want to study, go to university and have a profession; but shun marriage and do not contemplate having children or at least they show hesitation about it. They reject, in an explicit manner, the roles of married woman, mother, housewife and passive old lady. All those roles appear to them as incompatible with their more basic attitude to life and with fulfilling of their professional ambitions. Some textual examples speak for themselves:

"... I see myself managing a very active job, being a free woman, without any ties. Maybe I'd have a partner, but I'll keep the distances very clear. I'll not give to him any account of my life. I don't want to have kids or anything of the sort, they'll take away my freedom...." (student 13[18]),

"...I think I'll do business studies at the university in order to have fashion shops in several parts of Spain later. I don't think I'll marry, that business of preparing lunch, dinner, ironing, sewing buttons... doesn't match my personality, except if it is for my own. I'll do my own things and my partner his own. I don't want to have kids either...I don't know if I'd like to marry because I don't want to finish like a cleaner, scrubbing floors and taking care of my kids... (in old age) I don't think I'll remain seated in a chair watching TV, dressed in black..." (student 19[25]),

"I'll be working in my profession (biologist or lawyer), I'll earn my money and do whatever I want... I'll not marry and if I do I'll not have kids... In my old age I'll not stay seated at home, I'll be a dynamic old woman" (student 60).

The specific categories of this subpattern are: 'independent', 'not to marry', 'hesitates about marriage', 'hesitates to have children', 'living together unmarried', 'intellectual interests', and 'social conscience'. In addition to these

specific categories, the students of the progressive subpattern share other concepts with the yuppie subpattern. The key category of the progressive subpattern is 'to be independent'; this category makes it a subpattern dominated by girls. In Spanish culture, boys are supposed to be independent as a matter of principle, and in reality, they perceive themselves as such. Only girls view independence as a goal to be achieved through personal effort. In our society independence is not something given to women. On the contrary, there are forces at work which tend to keep women in a position of dependence with respect to their male counterparts. That is why the 'progressive' girls have to stress the category 'independence', first to make explicit their main aim in life, and second as a code word which express their rejection of traditional feminine roles. The negative attitude regarding these roles, especially those of housewife and mother, is sometimes expressed in strong terms. For example student 18[13] says that

"I don't like to have children, nothing of the sort, they would kill me, they would steal my freedom".

And student 71[62] writes

"I'll be a vet, I'll have my house and the things I like and as I like them. I'll have what I want without anybody giving me orders. Maybe I'll live with two friends (girls), we have planned it. I'll not marry for anything in the World, because if you do you cannot have the kind of life you like, because men do not allow you".

6.4.5. Friends, marriage and divorce.

The most salient difference between the yuppie and the progressive subpatterns is in their respective attitudes towards marriage and intimate personal relationships. In general, students attach a considerable importance to friendship, especially when they see themselves as youngsters (J.C. Coleman, 1980; H. Katchadourian, 1977). Friends tend to diminish in importance in adulthood and old ages. However in this respect there are significant differences between the students belonging to the progressive subpattern and

the rest. The girls belonging to the progressive subpattern seem to give friendship an especially relevant role in their lives. Most of those progressive girls who decide not to married see themselves as living with friends. Others will live on their own but travel with friends, even in old age. These students seem to look for an environment of intimate personal relationships different from that of traditional family life which they conceive of as too constraining. The students of the yuppie subpattern have a more traditional view on friendship: whereas the inner circle of personal relationship is defined by family life, friends are conceived of as an outer circle of sociability—in the work place, to have fun, etc—.

The percentage of profession-centred students thinking to marry is smaller than in the two other patterns. However it is just in the yuppie subpattern where we find students who consider the prospect of divorce and second marriages. Clearly, the rejection of marriage by progressive students makes it nonsensical for them to contemplate divorce and the relapse that second marriage means, whereas family-centred students do not dare to consider the breakdown of family ties that divorce represents.

Three yuppie students, two boys and a girl, contemplate divorce as a prospect, and these two boys also contemplate to marry for a second time. For example, one of them writes:

"I'll marry a terrific woman..., now I'm 44 and I have six kids, and I divorce getting rid of kids and I start to visit the whole world, in Sweden I met a woman and I marry her, and I have the time to have to more kids".

Apart from his reproductive overcharge—which is not typical at all—, this boy shows a nonchalant, even frivolous attitude towards divorce which is not absent in the other two students.

6.4.6. Money and consumerism.

Adding to the categories related to family and professional life, some other categories define the characteristic outlook of the profession-centred pattern. Among these categories are those related to money, properties and the quality of life. Although the girls of the progressive subpattern envisaged as a prospect having a good standard of living, they do not consider this as a predominant goal in life. On the contrary, for the students belonging to the yuppie subpattern these matters seem to be at the forefront of their concerns. The most common categories expressing these concerns are widely used: 'money' (used by 27 students), 'country life' (by 24), 'ambitious' (by 28) and 'sports, hobbies and pets' (by 24), 'properties' (by 41). As stated in the previous chapter categories which are frequently used are more socio-specific in their meanings and consequently they have more information content, developing the meaning of more general categories in a specific way. The five aforementioned categories are used by almost the totality of yuppie students providing an outline of the style of life those students expect to have. The level of their ambitions varies from the student who imagine being the owner of two factories, two real states in two of the most exclusive areas around Madrid, a Porsche 44, a smashing wife with blonde hair, tanned skin and blue eyes (student 16[11]), to the one who imagine he has bike, a job with a big salary, and lives with a terrific girl in a house in the countryside with 5 dogs taking care of it (student 8). Only boys belonging to this subpattern describe in detail the physical appearance of their future wives or partners. On the contrary, the few girls who show an explicit interest in the looks of their future husbands belong to the family pattern.

6.4.7. Free time and hobbies.

Most students of any pattern think of free time during their youth in similar terms: participating in sports, going out with friends, dancing, going to the cinema, etc. The few differences between professional students and the rest lie in the fact that the former show special interest in traveling, and having pets. Professional students also are more specific about hobbies such as having a motorcycle, cycling, playing chess or playing a musical instrument. The

interest in pets is typical of the professional pattern, no student belonging to the other patterns shows any similar interest. This difference is quite surprising, and may indicate a significant psychological gap between the individuals belonging to the professional pattern and the rest. Maybe professional students use pets as a way to assert their own autonomy as individuals, whereas the other types of students are too absorbed by family ties to contemplate any alternative affective attachment. The specificity and relative sophistication of the hobbies referred to by profession-centred students may also be interpreted as an index of their individualistic outlook.

It is during adulthood and old age periods of life where the use of free time differs more clearly between distinct patterns. Whereas family students, when adults, see themselves devoting their free time to family life, almost exclusively, profession-centred students fill that time with individualistic activities which are frequently related to their professional life. For instance student 30[24], who wants to be a biologist writes:

"I get a job in a lab and I go out with my video camera to film animals on weekends";

student 9[6] who wants to become a vet, also wants to take care of her own animals; student 2[1] who wants to be a graphic journalist will spend his free time drawing:

"I'll never be bored. I like very much drawing, I'll draw".

Other students like more than one subject and see themselves working in one and using their free time to cultivate the other. For instance student 28[22] writes:

"I like maths, I'll take a degree in Science, but I also like writing... I'd like to be a writer, I don't know... In my free time (if I have any) I'll paint and at night I'll write books for children... I'll travel, I'll visit the whole world with some company".

There is a gender difference in relation to sports which affects all patterns: girls show a lower interest in sports. There are 17 boys and 5 girls out the whole sample who foresee themselves practicing sports; boys usually specify the sport they will play: tennis, basket, football, golf, etc.; girls will just take exercise (unspecified) in order to keep fit.

6.4.8. Positive and active old age.

A distinctive characteristic of the profession-centred pattern is its positive and optimistic vision of old age. Typically, profession-centred students see old age as a time

"of retirement, spending the money saved along your life... living your last years as a king, enjoying the work realized through all your life" (student 86[75]).

But this comfortable situation does not exclude activity; old age is viewed as the period in which they will be able to do all those things that they did not have time to do during their working life:

"I'll retire, but I'll not stop my activities because I'll study new things and do some research about criminals... I'll live more quietly, I'll travel a lot and study about other civilizations. Being the active woman I am, I could only do this once retired" (student 18[13]).

In fact, traveling is one of the most common activities that professional students contemplate in their old age. Girls are specially keen on this:

"When I become old I'll travel a lot, all over the world, I'll go to the Moon on weekends (it will be possible then), I don't think to die without having seen the world" (student 26[20]);

"I'll travel a lot, I'll see the whole world in the company of my friends" (student 28[22]).

There are others who conceive of their retirement as a complement of their past working life:

"After I retire, I'll write some books about the researches I did when I was a scientist, and I'll write a bibliography¹³. I'll live with the money from the patents on my inventions and with my pension" (student 83[72]).

In the professional pattern those students who do not intend to travel or being so active in their old years, contemplate themselves living a quiet life surrounded by grand children:

"I'll take exercise to keep fit, I'll live with my wife, I'll visit my grand children and rest after all the work I have in my life" (student 85[74]);

"(I live) at a cosy house with my wife. I'd like to be a granddad and have nice grand children. To have a quiet life and die happy" (student 63).

These students who want to have family ties in old age, generally include their spouses as a part of the warm and quiet life they wish in their last years. Among the students of the professional pattern, only two boys and one girl contemplate themselves as widowers and widow, respectively, in their old age. However this fact does not make their last years less exciting than in the case of other students.

6.4.9 Control of action by goals.

One of the deepest psychological characteristics of the subjects included in the profession-centred pattern is their clear conscience that their goal in life is 'to be somebody', 'to realize their personal ambitions as an individual'. Of course, in a sense everybody is somebody; a housewife, for instance, is undoubtedly somebody, and in a way she may realize her personal ambitions as an individual by being a housewife (Berk, R.A. & Berk, S.F., 1979; Ehrenreich, B., 1982; Gerson, K. 1985). To become a house wife instead of anything else is a happy decision for some girls (in the next section we shall see some girls that express themselves in that direction). But in our

society what is generally understood by the expression 'to be somebody', 'to realize oneself' is the development and projection of one's personal capabilities beyond the domain of short distance interactions (family, neighbours, personal friends, etc). In that sense it may be said that whereas the subjects of the family pattern hardly have a need 'to realize their ambitions as individuals', because they perceive themselves as members of primary groups in which their individuality is immediately realized, the subjects of the professional pattern adopt a clear imperative of self-realization, of being somebody in life, independently from their belonging to any primary group. The adoption of this imperative generates a tension towards the future which usually lends a characteristic dynamism to their self-perception systems. In those individuals such systems appear structured as a **plan to achieve personal goals**. The two following examples give an idea of this dynamic tension:

"when I finish my university career which would be that of veterinary surgeon, I'll go to the USA or Canada to learn more advanced techniques and I'll open a clinic in Madrid..." (student 7[5]),

"...I reckon that first of all I'll be a ballet dancer in the Spanish National Ballet... later, as an adult I'll be the Ballet director for some years and later on I'll have my own ballet school... I'll have a child, but only after leaving dance..." (student 18[13]).

A striking feature of this pattern is the absence of any moral judgments about the subjects' own behaviour. Whereas, as I shall show later, the subjects of the family pattern frequently used moral maxims which seem to play a central role in controlling their personal social behaviour, the subjects of the professional pattern seem to use a different mechanism to control their actions. I shall call this mechanism '**Mode of Control of Action through Goals**'. The differences between the type social behaviour generated by a 'mode of control by maxims', which is characteristic of the family pattern, and a type of social behaviour produced by a 'mode of control by goals', which is typical of the professional pattern, probably has important sociological consequences.

Authors such as Weber and Parsons have proposed ideas which are akin to this distinction between control of actions through maxims and control

of actions through goals. I am referring to Weber's concept of 'rationality in connexion with the ends' and 'rationality in connexion with values', and Parsons' notion of 'instrumental rationality'.

The mode of control of behaviour by goals appears to be less fragile than the mode of control by maxims. Although a particular plan of goals can fail, if the subject who decided that plan possesses the general 'technique' of planning goals and organizing her action in relation to these goals, quite probably she will be able to generate a new scheme of goals to substitute the previous one. Control of behaviour by personal goals is a more individualized mechanism than control of behaviour by moral maxims. Probably this fact makes such mechanism more flexible than any set of moral rules. By structuring their personal goals in life, subjects define their **individuality** as a person beyond the emotional ties which link them with their family. The apparent detachment from their families that professional students show is only superficial though; quite clearly the assumption of the family values lies underneath the goals structure (Walkerdine, V. & Lucey, H., 1989: 1-16). The point is that there are families whose ethos consists precisely in imbuing in their young members the value of becoming a self-realized person, instead of merely considering them as members of the family group. The idea of responsibility that the families of profession-centred students seem to instil in their children, primarily refers to themselves more than to their family obligations. In this sense, control of action by goals reinforces an individualistic form of self-control, whereas control of action by maxims has as a result that the individuals conceive of their responsibilities on the affective background defined by family ties.

6.5. The Family pattern.

6.5.1. Belonging to a family.

The most distinctive and striking feature of the students included in this pattern is that they have a perception of themselves which is highly dependent on the central fact of their membership of their families. Family students strongly feel that they belong to a family. They seem to see the world

and themselves through a personal consciousness defined by the family horizon. When one of these students says 'myself', the meaning that she attaches to this word, quite clearly, is 'myself-in-my-family'. This identification with the family environment occurs not only with respect to their present family (parents and siblings) but also with respect to the family that they expect to form later in life.

Student 73 gives as a typical example of this attitude. Talking about herself as a youngster, she says:

"...I'll give the money from my job to my parents, for them to buy a new lorry... (as an adult, she adds,) I'll invite my parents, brothers and sisters for dinner very often... I'll marry a hard working man who likes kids, my husband and I will care that our kids grow up properly... my parents, brothers and sisters will lack nothing if I win the pools, they'll not need to work any more..."

The individuals with a family-centred self-perception use concepts such as: to live near their parents,

"...I'll buy a flat near my parents' place to be close to them just in case they are ill or I need some help..." (student 91[78])

and to work for sustaining their family (in the case of boys):

"...when you are an adult you need to work to earn a salary, to have something to eat and to feed your family..." (student 92[79]),

"...I see myself with kids and a wife to feed" (student 98[85]).

Some girls manifest their preoccupation for the welfare of their husbands and kids. The aforementioned student 73 says:

"... when I'm old I'll buy Christmas presents for my grandchildren, I'll look after my parents, visit my brothers and sisters... I'll prepare lunch and dinner for my husband..."

These girls specially stress their dedication to the care of their children:

"I think that to have a child is the most beautiful thing in your life. You... enjoy the time spent with your children" (student 64[56]);

"I'll have several children, I'll leave my work and devote myself to my children completely" (student 74[64]).

6.5.2. *Being a housewife.*

Some girls, placed in extreme opposition to the progressive girls, perceive themselves as housewives and living in complete dependence on their husbands¹⁴. This dependence is not only economic; it implies the acceptance of the husband as the person who takes the decisions in family life. As we can see in the following example, this dependence involves other relatives:

"I'll marry and leave my job. I'll take my children shopping to buy cloths, shoes, etc. On Sundays my husband will take us out for lunch. From time to time we'll leave the children with my mother or my husband's mother and we'll go out for dinner to a Chinese restaurant" (student 55[49]).

The number of girls who see themselves as housewives fully dedicated to their families is really small, only six out of a total of forty eight. This small percentage of intended housewives is in contrast to the fact that most of these girls' mothers are housewives (33 from 52). To be a housewife clearly is not a popular prospect for today adolescents. Five of the six girls who perceive themselves as housewives come from a low economic and cultural background, although it is not lower than that of other girls included in the dual or even in the profession pattern. In figure 11 this group of girls cluster on the extreme left of the plot.

On the part of the boys, only three of them conceive of their future wives as traditional housewives; one says it explicitly and the other two suggest it by means of expressions such as:

"When I arrive home from my work, my wife will serve me dinner..."
(student 5[3]).

Other boys are surely thinking of having a housewife as it can be inferred from expressions such as:

"I'll earn money from my job to sustain my family well enough" (student 82[71]).

No boy refers to a working spouse or partner, whereas many girls do. Although many boys, specially those belonging to the family-centred pattern, see themselves as married men and fathers, no one refers to the care of his children neither to the housework as an assumed responsibility.

To see oneself as a housewife almost necessarily implies a family-centred self-perception system. In fact all but one of the seven girls included in the family pattern, see themselves as housewives. As there is a total of 27 students included in the family-centred pattern, the number of girls in it is substantially smaller than that of boys, (respectively, seven and twenty). It seems that boys feel more comfortable than girls within the frame of the family-centred pattern, and although many girls want to have a family, they tend to see family life on a less traditional perspective, and try to make compatible their family responsibilities with a professional career, as we will see in section 6.6.

6.5.3. Marriage is boring but I'll marry.

Some of the family-centred students, especially boys, feel that marriage reduces their possibilities of having fun. In this respect there is a gradation from the students who say:

"you'll not go out so often"

to those who see marriage and its responsibilities as a boring condition and a hard time though, somehow inevitable. The underlying idea is that one is

suppose to marry, in spite of all the inconvenient attached to marriage. A few examples may show this fatalistic outlook:

"As I've a family I cannot go out for a good time because I need to look after my children" (student 88[76]).

Student 52[46] further elaborates this idea:

"To be an adult is very boring, you feel old, you have a safe job. When you've a family it's really boring because you cannot enjoy yourself, you cannot go out for fun and you become old. When I'm aged I'll be at home, sewing or crocheting. I'll be tired of living".

Student 92[79] goes so far in his negative view of marriage that it is not easy to understand why he still contemplates marrying:

"I don't like marriage because you feel a bit of a prisoner because you need to go home with your wife and you cannot go out to have a good time with your pals. You do not have as many friends as before because you get up earlier to go to work to earn a salary to feed a family... when I become old I'll be living with my children and grand children".

The last sentence discovers the underlying assumption that makes sense of that otherwise puzzling contradiction; for these students family is the central, unquestionable fact of life in all of its stages.

6.5.4. School, leaving or staying?

Generally speaking, the job expectation of family-centred students are only marginally related to education. Some of them openly declare their dislike of study, and others would be satisfied in obtaining the School Graduation (Graduado Escolar) at fourteen. The relation of most of the subjects included in this pattern with the educational system frequently appears as a source of suffering, a bitter pill to swallow as soon as possible. Student 94[81] expresses it clearly

"... I'd like instead of going to school as usual, I'd like to go to a police academy or to a 'guardia civil' (paramilitary police) academy, or even to a firemen school... the School Graduation is what I need to enrol in one of those places which I like... because I don't like to study... , when I'm studying I become very tired... I don't like to sit and do nothing but to learn and learn, I'd like to have a safe salary and to live without worrying about studies..."

In less dramatic terms, student 97[84] also shows her lack of enthusiasm for studying:

"After this year I see myself working in something, not wasting my time, maybe I'll study but some craft, not for many years. I want to finish my studies as soon as possible, without wasting my time in a long career".

In the two schools (Picasso and Zaragueta) located in a lower socioeconomic environment, there are more girls than boys who intend to continue studies. These girls see further education as the bridge to cross in order to move from their unprivileged backgrounds to higher positions in the social ladder. Further education is also contemplated by these girls as the path to move away from the traditional pattern of woman offered to them by their mothers (in these two schools, 42 mothers out of 50 are housewives, and 3 of the 8 who working outside home cleaners). The intention of so many girls to continue their studies is not just a desire; it is a reality in today Spain. In the academic year 1988-89, when the essays were written, there were 1.027.018 university students in Spain. The number of girls and that of boys was nearly the same, respectively 513.441 and 513.577. This apparent balance between genders in the total number of registered students, hides a higher proportion of graduated girls, because more girls than boys get their degrees (respectively, 61.724 and 44.383 in the academic year 1987-88)¹⁵.

6.5.5. Money by gambling and making own's will.

It is highly symptomatic that some of the family-centred students see in gambling the only hope of escaping from a future that looms rather bleak.

Although recent statistics show that Spain is the EEC country which spends more money on gambling, it is remarkable that this escape route is only present among family-centred students. Apparently these subjects find no realistic, goal-directed way to reach the standards of life that they perceive as desirable. Hence, they develop a mild version of the 'cargo cult' attitude (Giddens, A. 1989: 63 and *passim*) by attaching to games of chance a thaumaturgic role.

Another revealing characteristic of family-centred students appears in their insistence in making their own will. A total of eight students contemplate making their own will. Six of them belong to the family-centred pattern. Some of these think to make their will because they had become millionaires as a consequence of their luck in games of chance. But significantly there are others who having no fortune are still preoccupied about their inheritance. There seems to be a direct relationship between the importance given to one's inheritance and the level of psychological involvement in family life.

6.5.6. Free Time.

When they see themselves as youngsters, family-centred students think of their free time in terms of fun time, in a rather conventional way: going out with friends, going to discos, doing sports, etc. Certainly these sort of activities are also present among other types of students. Nevertheless in the case of family-centred individuals no alternative free time activities appear: there are no hobbies, no individual ways of enjoying oneself —writing, playing an instrument, etc—, no link between working activities and free time self-realization. In all cases, family-centred students see fun from a group perspective.

On the other hand, when they see themselves as adults, they drastically reduce their expectations of having fun, inasmuch as family life implies relinquishing those forms of group fun —which seem to have no substitute in individual forms of enjoyment—. This is the reason for the recurrent complain of marriage, which limits their freedom to go out as they used to do when single. In adult life, free time is absorbed by family life. In

this context having fun means to do so with the family: going to the countryside on weekends with their spouses and children, visiting their parents (mostly the girls), going out for a meal, etc.

6.5.7. Negative and passive old age.

One of the most distinctive characteristics of family-centred students is their pessimistic and negative view of old age. They contemplate themselves in old age as passive, without anything to do apart from visiting their children and grand children, and being visited by them. Some of these students see themselves bent down on a walking stick, or staying the whole day at home, sitting on an armchair, being afraid to go out just in case they catch a cold or fall down and break a bone:

"it is boring, the whole day with the walking stick, locked at home because you are afraid to go out, just in case you fall down and you die" (student 102[88]).

They see themselves in old age tired and waiting for death to come:

"to be an old person is a misfortune because many problems start, you lose your sports abilities, friends, relatives... to think about it gives me the creeps... You just wait for death to come, you are bored the whole day, playing cards, going for a walk,..." (student 32[26]).

There is a substantial number of students (15 of them) who do not feel that they would be able to manage on their own in old age, and they think they will need the support, financial or otherwise, of their children:

"I'll retire, I'll have my pension, my children will be working to give me a part of their earnings" (student 107 [92]).

Some of them see this help as a moral duty:

"my children will take care of me, they will treat me very well, as a mother should be treated. They will not send me to an old people's home" (student 101[87]).

The students who have a negative view on old age, also think that during old age all interesting activity comes to an end; these few activities they mention (playing cards or domino, going for a walk, etc.) are not considered as exciting, but as ways of concealing the emptiness of that stage of life. There are few family-centred students who have a positive view of the old age, and they see it, in a way closer to professional students, as a time to enjoy other styles of living; for instance, student 91[78] says:

"I'm old, I cannot go to discos, but I can go more to the cinema, I retire and have a good pension to live the rest of my life... I sell my flat in Madrid and buy a house in the country".

The relation with grand-children appears as the most positive aspect of old age for a majority of family-centred students. On this score the examples are numerous:

"When I get old I'd like to be in contact with children and be happy with them, I'd like to have grand children and I'd like that they were nice to me" (student 58[51]);

"I'll spend a lot of time with my grand children" (student 35[29]);

"Old age is the most boring stage of your life, there is a bit of happiness when your children and grand children visit you, you feel happy and enjoy them, and when they leave you feel sad and bad" (student 40[34]).

6.5.8. *Control of action by maxims.*

The students included in the family-centred pattern frequently adopt moral attitudes in relation to behaviour and manners:

"If I can, I'll let my kids do what they want as long as they don't get into drugs or booze, they have to watch out for themselves" (student 89[77]);

"I'd like to be happy like any other woman. I'd never have arguments with my husband" (student 106);

"If the kids have everything they want, they'll not have the same motivation to try their best because they'll think that it is enough to ask for what they want and they'll get it..." (student 113[98]).

Apparently, these students adopt the moral maxims that they hear from their parents as their own moral standards. These maxims resound in their essays. The fact that family-centred subjects adopt such maxims not only shows the "ethos" that hold the family together but appears as a fundamental element in the process of giving a sense to their actions. This way of justification of action is what I shall call **Mode of Control of Action by Maxims**.

Control by maxims indicates a self-perception directly influenced by parents attitudes and affectively dependent on such attitudes. In fact, maxims look like being the result of an emotional communion between the members of the family through a common 'ethos'. Now this kind of self-perception is in danger of not being able to survive the crisis of family control characteristic of the transitional stage that adolescence is in our societies. The result of the possible breakdown of that parental control is frequently the questioning of the moral maxims which have acted as the fundamental control mechanism of the individual's behaviour. This situation can lead to anomy as an outcome, inasmuch as a substitutive mechanism of control of the behaviour (for instance by means of goals) may not be available to the individual at the critical period.

In a way the 'mode of control of action by maxims' is akin to the attitude that Max Weber (1977) calls 'traditionalism'. Whereas the 'mode of control of action by goals' with the 'capitalist's ethics'. Traditionalist individuals, in Weber's view, have a phlegmatic attitude towards their occupations; they try to live as they have always lived, they work just to keep on going. The students here included in the family-centred pattern share this attitude, and 'to go on living' as their parents did, is probably one of the most pregnant maxims that govern their actions. Of course, considering our sample we cannot discriminate, as Weber does, between catholic and protestant

attitudes, because only one student is a Protestant (incidentally he shows a strong capitalistic ethos). The rest of the students probably are Catholic or indifferent in religious matters.

6.6. The Dual or Conflictive pattern.

This pattern applies to those subjects —all of them girls in our sample— who try to make compatible, when viewing their future, family life and professional life¹⁶. For these subjects, career and family do not appear as independent spheres —which is the case for the professional pattern— nor in a relation of means to ends —as it is the case for the family pattern—, in which working life is mainly understood as a means to support family life. Within the frame of the dual pattern, career and family are understood as equally important aspects of life, both essential in order to achieve personal fulfillment. This attempt to make these two aspects of life compatible is often a source of conflict, and because of that the 'dual pattern' may also be named 'conflictive pattern'¹⁷.

By using the expression 'dual pattern' or 'dual girl' we referred to those girls who see themselves as committed to the roles of mother-wife and career woman, but do not necessarily expect that their partners are going to share a part of the household labour. In this sense the notion of dual pattern should not be confused with the concept of 'dual-career family', as proposed by the Rapoport in 1971.

The Rapoport refers to couples with children in which both spouses "successfully combine careers and family life". Although dual girls want to combine both spheres and in general they presuppose that their husbands will have a professional job, they do not indicate that they expect their husbands to assume a significant part of housework. Consequently, in the case of dual girls the break of the sexual division of labour in its traditional form, —by having a paid work outside home— does not imply a demand for a re-assignment of the household labour. When dual girls write about their future husbands they refer just to their professions, not to any possible housework or care of the children. An example is girl 52 who says:

"I want that my husband has university studies like me, so he'd have a good job like mine. When married we'll live in a big house in Madrid. If I've kids I'll be good to them, I'll treat them well... I'll care that they study a lot".

The transition from 'we' to 'I' indicates the different sexual roles that this girl is assuming.

The conflicts that many women face in dealing with the two spheres (family and profession) which they try to embrace, are a decisive factor in these women's self-perception and give rise to different sort of strategies (K. Gerson op. cit.). We saw that progressive girls seem unable to see themselves at the same time as professionals and family women. The perceived difficulty in matching both activities, which goes hand in hand with their fear of depending on a man, keep those progressive girls away from marriage and motherhood. They perceive that there is a basic conflict between family responsibilities and professional self-realization, and they prefer to follow the professional path, renouncing motherhood¹⁸ if necessary, in order to get rid of that conflict. This is the most radical option of the many adopted by the girls of our sample. The referred conflict is also perceived by family-centred girls. However they choose to give up their jobs, devoting themselves to their families. In a way they consider marriage and motherhood as their personal career.

In contrast to both progressive and family-centred girls, **dual girls** do not solve the conflict by negating one of its poles. They are ready to navigate their way through that conflict, trying to keep the balance between both profession and family life by means of different strategies; but in any case they accept that double burden.

Dual girls perceive the conflict between their two roles with several degrees of consciousness, and consequently they develop different strategies to deal with that conflict. There are girls who apparently minimize the problem; others propose diverse solutions to solve the conflict and limit its negative consequences. In this respect three main types of solution appear: compromise, postponement and inconsistent solution.

6.6.1. Solution of the conflict by compromise.

Some girls are aware of the conflict between motherhood and career but they are not prepared to renounce either of these two roles. Their strategy consists then in reducing the tensions between both domains of self-realization by opting for a type of career which would allow a relative compatibility with family responsibilities. Some of these girls also look for support in housework in the form of domestic helpers (in contrast, family-centred girls would ask for help from their mothers and mothers-in-law). In this specific option the practice of the chosen career is somehow subordinated to the care of the kids:

"We'll have a big house, where I can have my office or surgery, so that I can see to my children and my home at the same time than any clients...as I'll be older by then, I'll get a young girl in as a nanny and to help around the house..." (student 68, whose essay was already transcribed);

"...married, both of us working, I'll work at a nursery and my husband at a paper factory. My daughter will be with me at the nursery..." (student 112[97]).

In these cases the conflict is solved by a compromise that is in fact a subordination of the career to the requirements of family life, which is contemplated in a rather traditional way. This strategy to dodge the conflict will be called **solution by compromise**. Student 77[41] writes along the same lines, but emphasizing even more the importance of her family responsibilities:

"I'll like to marry, to have a family, because I love children. I can see myself preparing breakfast in the mornings, saying goodbye to my children as they get on the school bus, making lunch in a hurry, dressing myself up, combing my hair and going to work."

This girl views her paid job as a kind of secondary activity, just as professional people conceive of family life: something in the background

which does not intrude into foreground. The order of the sequence described by student [41] is not only temporal, is also hierarchical: she goes to work after she has done all her duties as a mother and as a housewife. These girls find very difficult to think of their profession and family responsibilities as separate domains. For instance, students 108[93] and 116[100] contemplate being a nursery nurse and a teacher respectively, in order to take their children with them to their work places. So, the price of the compromise most often is a drastic reduction of professional prospects.

6.6.2. Solution of the conflict by postponement.

There are other girls who are not prepared to frustrate their professional opportunities in order to look after their family. However they do not want to renounce marriage and motherhood. So they plan to separate both roles in time. This separation indicates a clearer conscience of the difficulties that doing both activities simultaneously entail. For example, student 18[13] contemplates postponing having a child until the end of her career as a ballet dancer; she provides a typical example of this delaying option. I call this option **solution by postponement** to it tries to avoid the conflict between the two roles in question by deferring the undertaking of family responsibilities. This solution is closer in spirit to the outlook of typical 'professional' girls, whilst the solution by compromise is closer to the attitudes of family-centred girls. The postponement of maternity presupposes that professional achievement is the primary aim in life. Children come second, when the professional career has been consolidated and motherhood can hardly interfere with it.

Other girls not only think of postponing marriage and motherhood for professional reasons. They also want to take full advantage of their opportunities to increase their culture, their social relations, to enjoy life when young. Student 48[42] points to the reasons why she thinks of postponing motherhood:

"At eighteen I'll start to study for a degree. The idea of marrying soon is not in my mind. I want to travel, to know other cultures, to know other

people, etc. I think than when I'm 37 or nearly, I'll think it again because I like children and I'll like to have a family".

6.6.3. *The inconsistent solution.*

Finally, there is a third group of girls who in spite of the fact that they see that there is a conflict between housework-motherhood and professional life, try to go along with both activities without any strategy to make them compatible. The result is a discourse full of contradictions and inconsistencies. Student 114[99] words this attitude as follows:

"... I do not want to be a housewife or anything like that, I want to be a gymnastics teacher and I'll get it at any price... when I have my husband and my three children I'll take care of them and I'll buy everything they ask for because I'm working and my husband as well (I reckon he'll work too)... and my family will grow up in that way".

On the one hand this student categorically says that she does not want to be a housewife because she wants to have a career; but on the other hand she assumes the responsibility for the care of her children and husband. This type of thinking in which the perception of the conflict, however blurred, does not find a clear solution, shall be called **inconsistent solution**.

In the last example the contradiction underlying the situation produces an emotional imbalance which must be counteracted through the idea of earning enough money to satisfy every little demand of the children. One would say that the conflict implicit in the situation that the girl contemplates, generates a feeling of guilt for not being a full time mother. Thus, the latent contradiction between her role as a gymnastics teacher and her role as a mother —between being a full time teacher and a part time mother— generates anxiety: the 'guilty' career mother tries to compensate that feeling by satisfying all the whims of her children, to whom she cannot provide full time attention. In general this conscience of a looming conflict which menace the future of these girls can produce a lack of confidence which undermines the stamina

require to keep their dual aspirations. This is the cause of the characteristic anxiety that these girls show when writing about their professional future, through expressions such as:

"... I wouldn't like to renounce to my job for anything...", "... I'll keep my job in spite of...", etc.

Apart from those girls who have some degree of consciousness about the conflictive character of a dual profile, there are others girls who contemplate having a dual activity (career and marriage) and who do not seem aware of facing any conflict. Perhaps they really see both activities as compatible or maybe they simply do not elaborate the question further. In fact they do not specify their prospects too much:

"To finish my degree, to work in my profession, to marry and have children" (student 23[17]);

"I'll study pharmacy... When I finish my studies, I'll like marry, and have children. I'll be working but at the same time I'll take care of them" (student 24[18]).

6.6.4. No boys in a dual position.

As suggested above, the dual/conflictive pattern only includes girls (in our sample). No boy contemplates the possibility that his paternal/domestic responsibilities can put his career at risk. Boys do not see themselves involved in the conflict analyzed above; hence they do not show the lack of confidence and the anxiety which this conflict generates. Some boys in the professional pattern show more interest in their children than others, but this interest is reduced playing with them when they come back home in the evening, or helping them with their homework. Although family-centred boys they feel responsible for earning money for their children, they do not feel that they must look after them; just playing with them or taking them out on week-ends

seems to be enough. No boy in any pattern mentions housework nor the possibility of being a househusband.

6.6.5. The dual pattern as a pattern between two extremes.

Apparently girls included in the dual pattern adopt (as girls and boys in the professional pattern do), a mode of action controlled by goals. However those girls whose explicit "ethos" can be considered as "modern" —in contrast to the traditional mode of control by maxims—suffer the constant pressure of an underlying, more traditional "ethos". This "ethos", arising from the sexual division of labour, is at the basis of the referred conflict inasmuch as it prescribes some ways of behaviour and some stereotyped responsibilities (motherhood, housework, etc.) to women, independently of their professional jobs and their dedication to other fields.

These girls want what has been called by some "the best of both worlds" —and by others "the worst of both worlds". In fact they are in the middle of the road, demanding to live in both worlds; whether they have the best of both worlds, the worst or a balance between them, will depend on diverse factors, such as the evolution of their self-perception (to postpone maternity until their career is consolidated is not the same as to be prepared to share both roles whatever happens), and the partners they find (See K. Gerson op. cit.). This middle of the road position shows in the concepts they use. Apart from the two distinctive concepts "housework and career" and "family and job fulfillment", they share other concepts with the other two patterns, but always avoiding the most extreme ones. The specific concepts shared with the other patterns depend on each girl in particular, because this is not a clear cut pattern (no pattern is, but this is even less so). However categories such as "marry", "children", "continue studies" and "family ties in old age" are in nearly all dual subjects. All dual pattern girls show a great conceptual similarity when they refer to old age. Again, in this respect they are located in the middle; they do not see old age as the active and positive time that the professionals conceive of, nor as the boring, passive time of family-centred students. Dual girls, in general, see this period of life as a time of rest, quiet

life and close contact with their children and grand children. Neither too much activity, nor passivity.

In figure 5 the intermediate position of dual pattern girls appears clearly; they define a specific area, which interestingly enough coincides with the biggest concentration of girls in the plot, as it can be seen in figure 8. In the sociosemantic plot of concepts there is also a specific, although not exclusive area corresponding to the categories characteristic of the dual pattern (see figure 5). The majority of girls with a dual self-perception pattern appear closer to the professional pattern than to the family pattern in the sociosemantic plot of individuals, probably due to their professional attachment to studies, and their modern explicit ethos. However there are few girls who lean towards the family pattern.

NOTES TO CHAPTER 6

¹ Our method of deconstruction/reconstruction is however very different from Derrida's. The sociosemantic approach introduces an intrinsic element of self-interpretation in the text: this element consists in the relationship between the different, contrasting subjects who compose that text (as a sum of individual texts). Therefore interpretation is not merely a relation between the object (the text) and the subject (the interpreter). The object also interprets itself through the different subjects inhabiting it.

² Interpretation inevitably generates sense, and in doing so it productively reproduces meaning; the meaning of a text changes in its process of decoding by the receiver (Eco, H. 1975; Lotman, L. 1979).

³ We follow here Rapoport definition of career "in its more precise meaning it designates those types of job sequences that require a high degree of commitment and that have a continuous developmental character" Rapoport, R. and Rapoport R.N., 1976: 9.

⁴ These poles of attraction may be viewed as an 'intentional basin of attraction' in a model of catastrophe theory. Gleik, J.,(1988).

⁵ In the reconstruction phase of the analysis the context in which a concept is used is more relevant than the concept itself. In this respect we will assume that "all linguistic production are indexical" (Garkinkel H. and Sacks, H. 1970), that is the reference depends on the context.

⁶ The number of university students in Spain is rapidly increasing in the last years, and is nothing to suggest a change in this tendency. In 1980-1981 they were 649,098 students registered in Spanish universities; in 1990-1991 the students were 1,137,228. (Sources: Ministry of Education and Science and Consejo de Universidades-Secretaria General).

Women employment rates can be also an indicator of the trend of Spanish women towards a paid job: In 1978 the rate of employment of women between 25 and 54 years old was 29.3%, whereas in 1992 the rate was 51.2%. In the same period the employment rate of men was 95.5% in 1978 and 92.9 in 1992 (Source: INE -National Statistics Institute-, 1993).

⁷ Lacking of more precise statistics about working married women, it is interesting to know that in Spain the women activity rate is 33.1% and the feminine unemployment rate is 23.1%.

⁸"Meaning... can be defined (tautologously) as the significance of the information to the system processing it." Wilden, A. (1972, pp. 233).

⁹ Physicists say that two systems may become **resonant** when they share some natural frequencies.

¹⁰ For a deeper analysis of intersubjective meaning see Searle, J. (1969); Austin, J.L. (1962), which have been used in this short presentation of the concept.

¹¹ As explained previously, the computer programs available to implement multidimensional scaling, only accept 100 variables and as a consequence I reduced to 100 the initial list of 116

students. There was no need to reduce the number of students at the content analysis stage, therefore some of the examples correspond to students discarded in that reduction. The students who are in both lists have two numbers. The first corresponds to the 116 individuals list; the second, which goes between square brackets, corresponds to the 100 individuals list. Students who are only in the 116 individuals list are identified just by their numbers in that list.

¹² This pattern roughly coincides with what K. Gerson calls *Veering away from domesticity*. She defines the women in this pattern as: "Veering away from childbearing, child rearing, and domesticity and toward strong work commitments in adulthood". (K. Gerson, 1985:69).

¹³ I guess that he means 'biography' instead of 'bibliography'.

¹⁴ See K. Gerson op. cit.: 93-122; 127-132.

¹⁵ Source: I.N.E (Spanish National Institute of Statistics). "Estadística de la Enseñanza en España, curso 1988-89".

¹⁶ This group has many similarities with the group defined by K. Gerson as combining committed work with parenthood. (See Gerson op. cit.: 158-190)

¹⁷ VARELA, J. points out this conflictive aspect of what we call the dual model: "The triple role of mother, 'educator', and good professional --which substitutes the role of mother, virgin and housewife-- puts the "new" woman in an uncomfortable situation because she needs to reconcile her autonomy and her liberation with new forms of servitude and dependence" (1990: 230).

¹⁸ I will not discuss here the actual viability of the options considered by the students, neither the degree of freedom that they have to choose between options. As said in chapter four I take the words of the students at face value: if someone says "I'll not marry", I accept this as her present, actual option, which is determining her present actual action. Of course that option can change in the real future, but that real, 'objective' future is not determining present actions. Only intended 'subjective' future determines present actions. The aim of this research is to illuminate the self-perception of some adolescents, not to determine the possibilities they have to fulfil their aspirations.

CONCLUSIONS

0. Introduction

The purpose of this thesis was to define, analyze and operationalise what I have called self-perception systems using a cohort of Spanish adolescents between the ages of 13 and 14. The relationship between the personal **self-perception systems** that define how individuals view themselves and the world around them, and the educational performance of these individuals, are at the heart of self-perception systems.

As a result of my research I proposed a methodological approach which represents an attempt to bridge the gap between the qualitative and the quantitative traditions in social research. This approach hinges on a technique which I have called **sociosemantic analysis** which uses the instruments of content analysis and non-metric multidimensional scaling.

The concept of 'self-perception' was presented as embracing the self-images, attitudes, motivations, expectations, and views of reality, which define the horizon of meanings of social individuals, and are used to make sense of their actions. In the light of this conception, the self-perception patterns of the students were considered crucial with respect to laying out their futures and hence thereby affecting their attitude towards education and, I suspected performance as well, although this thesis was not specifically concerned to look in depth at individual elements of their overall *weltanschauung*.

In order to substantiate the concept of 'self-perception pattern' (and its pragmatic counterpart, the concept of 'socio-educational motivation') I defined first the problem in relation to the main theoretic traditions of the sociology of

education (Chapter 1). Second, I put forward the specific theoretical framework in relation to which the concept of self-perception system is conceptually constructed (Chapter 2). This theoretical framework is based on a plurality of theoretic traditions, among which concepts about systems theory and second order cybernetics play a central role. I developed the concept of self-perception system and that of self-perception pattern, which constituted the theoretical backbone of the research (Chapter 3). Subsequently, I developed a specific methodology, sociosemantic analysis, in order to deal with the empirical evidence on which this research was based (Chapters 4 and 5). The interpretation of the data processed through that methodology was provided in Chapters 5 and 6. This interpretation defined the characteristics of the self-perception patterns at the empirical level.

1. The Problem.

Sociologists of education have been for a long time aware of the influence that variables such as social class, gender, race, type of family, type of school, peers, etc., have on the students' attitudes towards education. Studies convincingly linking such variables to academic performance have been produced. However, those analyses have been, in general, less successful when it comes to giving a plausible account of how those variables would coalesce at the individual's level.

Arguably, individuals can act **according** to some variables, but they do not act **because of** such variables. They do that because of their internal, idiosyncratic, **personal**, motives and reasons.

When the sociology of education, in addition to establishing some useful correlations between 'objective' facts, has to confront its subject from a **pragmatic** —not just **theoretical**— standpoint, such as providing answers about public concerns on education, a more concrete perspective, focussing on the individual's actions could well be needed.

At this pragmatic level it is important to look critically at the theoretical model of the individual subject that many studies have taken for

granted, in order to reformulate that model in a way that would make it possible to address properly the pragmatic issue of socio-educational motivation. The concepts of self-perception system and self-perception pattern should be understood from this perspective.

The sociology of education has generated a number of theories to explain the basic cause of concern of modern educational systems: their inability to accomplish efficiently the fundamental aim postulated by the ideal of universal education, namely the equalization of social opportunities for all citizens.

Universal education, a well established fact in today's developed societies, has not guaranteed equal opportunities for the underprivileged sectors of these societies. The theories that have tried to explain this relative failure may be grouped in relation to three main outlooks: 'cultural deprivation theories', 'reproduction theories', and 'cultural relativism theories'.

It was argued that these three perspectives have in common what was described as a 'reified' conception of the culture, and an understanding of the individual subject as a rather passive actor in relation to her cultural environment. From this point of view culture is conceived of as something that would externally determine the subject in a cause-effect relationship. Another conception of culture was presented in the course of this work: culture as an inner phenomenon, embodied at the individual's level. I have argued that individuals are cultural systems in themselves; but they are living cultural systems, not reified ones. Certainly, those systems interact with each other, and that interaction produces as a result the parallel evolution of such systems.

From this standpoint it is possible to argue that the culture of a group is the outcome of the concurrent evolution of individuals which can be called 'structural coupling'.

I have developed this argument in a heuristic model leading to the formulation of the concept of self-perception system. In the light of this model, I argued that individuals relate to their social milieu as coherent, self-producing, cultural actors. Only individuals as individuals can explore new

ways of cultural realization. Indeed it can be argued that in the light of a rapidly changing social environment they are constrained to do so. In this case, individuals in the process of becoming a person, are likely to run into conflict with the constraints of their socio-cultural background. The result of that conflict will be cultural innovation. Underlying processes of cultural innovation are then the realities of the individuals as cultural systems dynamically self-constructing themselves. It is to refer to these individual systems that I have proposed and developed the concept of self-perception systems. Similar self-perception systems can be viewed as instances of a common self-perception pattern.

The analysis of these self-perception patterns in the case of Spanish students belonging to the last year of their compulsory education has been the specific subject of this thesis.

2. The conceptual framework.

This thesis has drawn on a set of concepts, most of them belonging to the field of system theory and cybernetics, which have been recast in a psycho-social context in order to flesh out the concept of self-perception system.

The use of those concepts had a tentative and heuristic character. Concepts like 'classical' and 'nonclassical systems', 'organizationally closed systems', 'action systems', 'informationally open systems', 'structural coupling', 'reflectivity', 'communication' and 'complexity', presented in Chapter 2, were not conceived of as empirical concepts, but as notions instrumental to the spelling out of a set of heuristic hypotheses. The connection of these hypotheses took the form of a heuristic model built around the concept of self-perception systems.

The use of this conceptual framework introduces a epistemological perspective which leads to the consideration of: i) social science as an **observer-dependent** activity; and ii) individuals as autonomous entities who produce and reproduce themselves in an open process of continuous

interaction with their environment. This epistemological position has been assumed and developed in this thesis.

3. The heuristic model.

I have developed a heuristic model, the concept of 'self-perception system' set out in detail in Chapter 3. This heuristic model, as all similar ones, was not intended to be proved in itself, as a set of testable hypothesis. Its role was to lead to the production of empirical data as well as the generation of testable empirical hypothesis.

The heuristic model that considers individuals as self-perception systems was based on three main postulates:

i) Social individuals have idiosyncratic outlooks from which they understand themselves as well as the social reality around them.

ii) Social individuals are autonomous, self-coherent systems, which have a characteristic inner logic due to the fact that they are organizationally closed systems of a psychosocial, conceptual/intentional kind.

iii) Social individuals produce and reproduce their autonomous outlooks as a consequence of their need to maintain their coherence as organizationally closed systems.

The proposed concept of self-perception system was characterized in the following terms:

a) A self-perception system is an organizationally closed system made up of the cognitive and motivational schemata through which the individual perceives herself and the world, and acts in that perceived world.

b) At a given moment, each individual agent has only one basic self-perception system.

c) An individual's self-perception system is constituted as a self-coherent and dynamic network made up of concepts, evaluations, aims, expectations, attitudes, wishes, etc. It is composed of both 'objective' (cognitive, conceptual) and 'subjective' (attitudes, volitions, etc.) elements.

d) A self-perception system does not only refer to individuals' perceptions of themselves; it also include those individuals' perceptions of the world around them, and specifically of the social world that makes up their environment of interactions.

e) A self-perception system comprises all the knowledge/attitudes of an individual about reality. Hence, any knowledge or attitude that a person has, would be a part of her identity as a self.

f) An individual's self-perception system is neither a purely 'psychological', nor 'sociological' entity. It is an intrinsically psycho-social entity in which both elements, psychological and social, are only aspects of a unified self-productive system.

g) A self-perception system changes without loss of its defining character and its internal coherence. Consequently, it changes according to its inner logic. Hence, it cannot be properly conceived of as being only the result of the individual's internalization of a set of external social norms.

4. The methodology.

The empirical sections of this research were built upon the heuristic model. The empirical sections were designed to produce testable hypotheses based on a corpus of data, produced and interpreted by means of a specific methodology.

The methodology employed in this thesis combined several techniques: 'Text Production' (the technique of inducing the production of a relevant text by the subjects investigated), 'Content Analysis' (of those texts),

and 'Sociosemantic Analysis' (which used content analysis for examining the data and made use of Multidimensional Scaling).

The 'text production technique' was based on 116 essays written by the students who participated in this research. As indicated, the analysis of those texts went through two successive stages, first that of content analysis (Chapter 4), and second that of sociosemantic analysis (Chapter 5). Finally, a third stage consisted of the full **interpretive analysis** of all the information gathered (including the results of the previous content and sociosemantic analyses).

Thus, this combination of techniques produced several levels of data. The most basic level was that of the corpus of data itself, namely the collection of essays. The second level of data was generated through the content analysis of this corpus, which determined a set of conceptual categories ensconced in the essays. This analysis gave a general picture of the cognitive, volitive, attitudinal, etc., characteristics of the set of individuals analyzed. As a consequence it supplied the researcher with a first view of the location of each individual's self-perception system (with respect to those of the other individuals). The formulation of some provisional hypotheses about patterns of self-perception suggested by the data, was already possible at this level.

A third level of data was produced by means of the subsequent sociosemantic analysis. This socio-semantic analysis graphically expressed (by means of multidimensional scaling) the structure of conexions between categories (through the individuals using them) as well as the structure of conexions between the individuals (through the categories used by them). In short, the stage of sociosemantic analysis showed, by means of sociosemantic plots, the relative social distance between the meanings present in the sample, as well as the relative semantic distance between the individuals composing it.

Finally, the interpretive analysis was based on the concurrent use of these three levels of data (the corpus of texts, content analysis, and sociosemantic analysis). The determination and characterization of three main self-perception patterns among the individuals of the sample emerged through a process of abstraction.

An interpretive analysis of this kind cannot be done in a mechanical, and/or linear way. It must be done by examining many times the different levels of data, making numerous hypothetical connexions between data in each level and across levels, and trying to corroborate them. This work began in Chapter 5 and was completed in Chapter 6.

When the aim is to investigate the inner logic of individuals as self-perception systems, such a methodology seems appropriate. The researcher must 'let those individuals speak for themselves', and, even more importantly, she must 'let the data speak for themselves'. If the research would had been undertaken **presupposing** a set of **empirical** hypotheses to be tested by means of their implementation through **variables**, the methodology would have been more conventional. But my purpose in this thesis has been to produce a 'grounded theory' (Glaser and Strauss, 1967; Strauss, 1984), a theory not entailed by an a priori framework of empirical hypotheses, but entailed by the structures a posteriori discovered in the data.

5. Patterns of self-perception

Although each person has her own idiosyncratic self-perception system, it was possible by using the methodology described above, to locate similarities between individual self-perception systems. Those similarities allowed the grouping of analogous self-perception systems into different patterns of self-perception. The self-perception patterns emerged as groupings of similar self-perception systems.

The different levels of data analysis that were used in this research produced sufficient evidence to be able to detect three main self-perception patterns and two sub-patterns. They were called: **family oriented self-perception pattern**, **profession oriented self-perception pattern** and **dual pattern**.

The two sub-patterns were found within the professionally oriented or professional self-perception pattern; they were called the **progressive sub-pattern** and the **yuppie sub-pattern**.

5.1 The profession oriented pattern.

A group of students appeared to have their self-perception based on their future career life and the issues related to or derived from that expected future. Their professional self-realization seemed to shape all other aspects of their conceptual and intentional world: studies, family life, habits, etc.

Predictably all the subjects included in this pattern view themselves as highly qualified professionals: doctors, journalists, lawyers, pilots, mathematicians, etc. To reach that status they intended to get—at least—a university degree

The profession-oriented students organize their goals well in advance. They attempt to plan the development of their academic achievements in a pretty accurate way. They have a substantial knowledge of the stages and options of the education system.

Other features of this self-perception pattern are less predictable, and hence more interesting theoretically. The individuals who adopt the professional pattern show a surprising autonomy with respect to their parents. These are literally invisible—so far as their presence in the texts is concerned. Their present family life does not directly appear, and their future family life seems to be quite detached from their objectives of personal self-realization, constituting no more than a secondary domain in relation to their professional life.

Strict individualism appears to be the hallmark of this pattern. The world of meanings of these students appears to be centred on themselves as **individuals**. Their belonging to primary groups (first and foremost their family) seems to be felt by them as somewhat circumstantial.

Thus, the individuals who conform to this pattern seem to decide and control their actions by carefully structuring their lives as a chain of successive (sometimes, parallel) goals. For that reason they 'control their actions by goals'. Typically, the extent of this scheduling by goals encompasses their

whole lives even old age, which it self is viewed in active, positive terms. In this pattern goals seem to give sense to their lives.

It is possible to distinguish two subgroups among the students with a professional self-perception pattern: they were included in two sub-patterns, the yuppie and the progressive. The critical feature which differentiates those two sub-patterns is the conception and attitude towards future family life. Students within the yuppie sub-pattern accept the possibility of having a conventional family (including, without qualms, the possibility of divorce), —although it must be stressed, this future family life plays a secondary role in their concerns. On the contrary, students belonging to the progressive sub-pattern reject conventional forms of future family life. They do not accept marriage and/or having children. It is important to stress that the totality of students included in this sub-pattern are girls.

5.2. The family oriented pattern.

In contrast to the previous pattern, another set of students appear to focus their expectations on family related issues, and seem to understand their personal self-fulfillment in relation to their family life. These students feel strongly that they are an integral part of a family. They seem to see the world and themselves through a personal consciousness defined only through and by the family. The presence of their parents in their essays is very substantial. Their expectations are also largely defined in relation to their future family. 'Marriage' is a central category in their repertoire. Not only family but other primary groups seem to be essential to their social lives. Their individuality appears as defined with respect to such groups (for instance, in all cases, family-centred students see having fun from a group perspective). They have no hobbies, no individual ways of enjoying oneself —writing, playing an instrument, etc—, no link between working activities and free-time self-realization.

Generally speaking, the job expectations of family-centred students are only marginally related to education. They want to work as soon as possible, and only accept further education as a painful price that they are

likely to pay in order to get a semi-skilled job. An outstanding feature of this pattern is the instrumental conception of work. This is not understood as a means of personal fulfillment but as merely as a means to sustain the family.

The individuals belonging to this pattern seem to define, decide and control their actions through short term goals, but also by means of moral maxims. Their horizon of goals only reach their first proper job, marriage and children. Goals do not play a strategic role in the organization of their lives, they seem to depend more on moral maxims of a general kind to make sense of their actions. This mode of controlling action was named 'control of action by maxims'.

The moral maxims that these individuals use or presuppose in their essays seem to be a direct reproduction or echo of the maxims that they hear from their parents, and apparently play a critical role in the reproduction of the moral cohesiveness of family life.

The lack of long term goals beyond child rearing seems to have as a consequence a passive and negative view of old age.

5.3. The dual pattern.

This pattern describes those subjects —all of them girls in our sample— who tried to make compatible, when viewing their future, family life and professional life. For these subjects, career and family do not appear as independent spheres —which is the case for the professional pattern— nor as means to ends —as it is the case of the family pattern, in which working life is mainly understood as a means of supporting family life.

Within the frame of the dual pattern career and family are understood as equally important aspects of life, both essential in order to achieve personal fulfillment. This attempt to make these two aspects of life compatible is often a source of conflict, and because of that the 'dual pattern' may also be called the 'conflictive pattern'. For that reason it could be argued that the girls of our sample give evidence of being partially aware of this conflict and elaborate

several strategies to deal with it: postponing having children, working from home or finding a supposedly compatible job, etc.

5.4. The two basic sociosemantic dimensions.

An interesting feature of the sociosemantic analysis was that the bi-dimensional plots generated in it, allowed a clear representation of these three models in terms of just two dimensions. The first and main dimension, represented as the horizontal axis, was interpretable as the 'individualism dimension'. It orders categories and individuals according to this notion, (from maximum to minimum individualism). The second dimension, represented by the vertical axis, was interpretable as the 'consumerism (expectancy) dimension'. It also orders categories and individuals according to this notion (from maximum to minimum consumerism expectancy).

According to this view, the progressive sub-pattern would be defined by the highest level of individualism and a low-medium level of consumerism expectancy. Whereas the yuppie sub-pattern would be defined by the highest level of consumerism expectancy and a high-medium level of individualism. The family oriented pattern appeared defined by the lowest level of individualism and the lowest level of consumerism expectancy; whereas the dual pattern would be defined as a low-medium level of individualism and a moderately high level of consumerism expectancy.

6. Gender and self-perception patterns.

The analysis of the students' essays made clear that girls and boys show substantial differences in relation to their self-perception systems. These differences appeared as an unequal distributions of girls and boys across the self-perception patterns which have just been summarized. First, there is a pattern, the dual pattern, with includes girls exclusively. Second, girls occupy the extreme positions in the other two patterns: as a matter of fact, the extreme area of the professional pattern, which make up the progressive sub-pattern, is also constituted exclusively of girls. On the other side of the sociosemantic

plots, girls occupy the extreme area of the family oriented pattern. This fact suggests that for some girls the option between patterns of self-perception appears in particularly radical terms. In sum, girls tend to be concentrated in three clusters, one in each extreme of the plots and the third near the middle.

Boys tend to be more homogeneously distributed although they are conspicuously absent from the progressive sub-pattern (however some of them are present in the area that in the plots would correspond to the dual pattern).

The analyses have also shown that the life strategies of girls in the main are different from those of boys. Girls on the whole seem to be more conscious of the professional difficulties that they are likely to face. Girls also feel that the private and the public spheres of their lives are interconnected, whereas boys do not seem to perceive a strong relation between both domains and see no conflict between them.

7. Self-perception patterns and social class.

This thesis has avoided an a priori classification of the students in this sample into distinct social classes. That is why no attempt was made to establish a strict, quantitative correlation between social class and self-perception patterns. It can be argued, from an epistemological point of view, that in order to establish a qualitative correlation between the two phenomena, it is necessary to have an adequate definition (both theoretical and operational) of social class. However, within sociology the definitions of social class seem to be problematic. This is why, instead of trying to establish the quantitative relationship between unclear concepts (through debatable and merely approximative indicators), I postponed a definition of social class as such until it become possible to define it in the light of findings made available through my use of self-perception systems.

Arguably, the conventional account of social stratification pays an insufficient attention to the way people look at themselves (it is the 'objective/subjective dilemma of social sciences', as P.M. Davies *et al.* put it). Very often, some 'objective' categories of sociological thought are imposed on

people regardless of how they identify themselves socially. The phenomenon of social stratification appears in this light as something external, that 'occurs' to the subjects who are being analyzed in this respect.

In this sense my research show several coincidences, for instance, with Davies, Coxon and Jones' work **Images of Social Stratification**, inasmuch as it attempts to produce some resonance between the accounts that sociologists give about people and the images that these people have about themselves.

The analysis of the students' perception of themselves and their future suggested that specific patterns of self-perception are more likely to be prevalent among individuals having certain social backgrounds. In general, the students who see their future oriented to family life, in the role of breadwinner or housewife, came from working-class families. But the difference between the expectations of the students with a working class background and the reality of their parents' lives is outstanding. The desire to have a career, the belief both in the meritocratic ideology and in the possibility of upward mobility are common among students with a working-class background.

Arguably, this difference with respect to their parents' social reality is the fact that needs an explanation. The concept of self-perception system, which implies that of informational openness, creativity and change, provides a framework to find that explanation, as this thesis has tried to argue.

8. Final reflections and suggestions for further research.

I wish to mention what I will call the limits to this research.

In the first chapter I did not fully develop the themes concerned with areas such as compensatory education and cultural relativism because such an exegesis and discussion would have been lengthy and my purpose was only one of referring to sections of those theories which were important in terms of my problematic.

Secondly, I did not discuss the research in terms of the generation of new educational policies. Whilst the motivation of the research was derived from my concern with the differences between ability and educational performance, as my work progressed I become more concerned with the development of an adequate instrument of analysis which would allow us to look at this area with grater precision. Hopefully, once the method is more refined, work could be undertaken in this area.

The theoretical background of this research presented in an abridged form in Chapter two, cannot be considered to be a complete, self-contained presentation of systems theory and second order cybernetics because, again and by necessity my presentation was governed but the fact that I was looking for elements to construct an adequate instrument of analysis rather than attempting a rigorous and systematic critique of approaches and schools. Indeed, one could go so far as to say that the sociology of education has in the past been far too concerned with approaches and not concerned enough with problems and problem solving.

The heuristic model presented in Chapter 3 could have been expanded to include a much wider discussion of the psychological literature, especially of those areas concerned with personality and developmental psychology.

Equally, the concept of self-perception system was presented without a thorough-going development of its genetic and evolutionary dimensions. The sociological projection of this concept, that is to say the way in which individual self-perception systems interact through a process of parallel evolution influence each other and produce a cultural environment which, in some aspects, also appears to be a collective self-perception system, will need more work in the future.

Looking at the empirical sections of the thesis, I feel that the sample of students selected cannot be taken to be a quantitative representation of the entire student population. Sometime in the future it could be useful to take a larger sample to deal with this important matter.

The essay technique which I used to produce the basic data has limitations some of which I discussed in Chapter 4. Because it is what I described as a weakly framed technique, it cannot be as specific as a strongly framed techniques. The fact that students expressing themselves through their written essays whilst in the school environment could also have given rise to a bias.

The kind of content analysis I used was just one of many forms available. The strictly grammatical aspects of the text were disregarded, although those aspects were obviously relevant to illuminate the existence of different cognitive styles of the students. Some classical techniques of content analysis i.e., the frequencies of key words, occurrences of words, etc. were also not used although it is possible that they can provided us with some further information about the semantic structure of the texts.

It can be said that i did not supply sufficient information about the academic performance and social background of the students. Firstly, official accounts of academic performance were not available. Secondly, my concern was not to use established concepts of social class initially but only to look at them once I had collected the data and analyzed it by sociosemantic analysis.

It can also, perhaps, be argued that the patterns which emerged are closely dependent on the sample I used and that if a different i.e., more varied sample was used it could have produced different data which would have had to be organized in a different form. Again this is something which will have to be tested.

It would have perhaps been possible to have described even with the present data a different typology of self-perception patterns. The problem is not that different typologies are possible, but the consistency between them. Different typologies can be not only self-consistent but reciprocally consistent inasmuch as their patterns do not contradict each other. For instance, it could have been possible to detect two sorts of traditional patterns, masculine and feminine. This further differentiation would have not been contradictory with the analysis proposed, which considers a single traditional pattern.

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