

Interdisciplinarity, Research Policies and Practices: Case Studies in Spain

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Introduction	3
1. Interdisciplinarity in the Spanish research structure	5
1.1. The National R&D Plan (Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica 2004-2007)	5
1.2. The Strategic Action for Research into the Promotion of Equal Opportunities Between Women and Men.	8
1.3. CSIC (Centro Superior de Investigaciones Científicas)	9
2. Evaluation and interdisciplinarity	12
3. Perceptions of interdisciplinarity at institutional level	15
4. Interdisciplinarity from the researchers' perspective	18
Conclusions	22
Bibliography	24

INTRODUCTION

In Spain research is conducted largely by universities, within a higher education system which is tightly controlled and funded by the state, whether in the form of regional or of national governments (see Carrera et al., 2005), and therefore the capacity for interdisciplinary research is closely related to the extent to which national Research and Development plans and their guidelines encourage such a perspective. There is no established tradition of interdisciplinary research, as the university system is rigidly disciplinary (see Carrera et al., 2005), and it is only recently that interdisciplinarity (mostly *multidisciplinarity*) has been included as a feature of research programmes. Given this context, an examination of interdisciplinarity in the country must focus primarily on the periodic framework R&D plans known *Plan Nacional I+D+i*, coordinated by the Ministry of Education and Science, which are the main force guiding the direction of research in Spain, and which are evaluated and adapted every four years. These often take into account European Union directives and Framework Programmes (and their recent awareness of interdisciplinarity is partly related to this fact), but they are also strongly national in their perspective, favouring perceived social and political aims at national (even nationalist) level, a fact which is sometimes particularly evident in the Humanities and Social Sciences Programmes. Regional governments have their own R&D programmes, again often geared towards territorial interests, but also influenced by national directives in organization and guidelines. Funding bodies fit into this structure, and are mostly public, although private funding has been growing recently in specific areas.

For this report we have focused on how interdisciplinarity is understood at programme level in Spain, mostly within the current R&D plan (*Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica 2004-2007* approved by the Government in 2003), and particularly in the Humanities and Social Sciences Programmes. We have looked further into examples of practice in two institutions and their projects, which are partly dependent on this framework R&D Plan: the *Instituto de la Mujer*, which co-finances the Strategic Action for the Promotion of Equal Opportunities between Women and Men (*Acción Estratégica sobre Fomento de la Igualdad de Oportunidades entre Mujeres y Hombres*), included in the Social Sciences area of the 5th National R&D Plan (*Plan Nacional I+D+i 2004-2007*), and the CSIC (*Consejo Superior de Investigaciones Científicas*), a national research institution with specific interdisciplinary networks of research.

To obtain the qualitative data on which the report is based we contacted 13 subjects from the academic community or involved in the administration of research (academics also in all but one case). Our interviews, initiated through a brief electronic questionnaire and followed by longer personal interviews when possible or relevant, were conducted with administrators, with coordinators and “experts” from the main evaluation

bodies, and with a number of researchers who had participated or were participating in interdisciplinary projects. Four answered our questions only as researchers and four as members of the executive board of an institution related to research activities in Spain. The last third were both researchers and members of the executive board or “experts” in an institution and answered the email questionnaire or personal interview in both capacities.

At institutional level, we contacted board members from representative assessment and research bodies: *Agencia Nacional de Evaluación y Prospectiva* (ANEP), *Agencia Nacional de Evaluación de Calidad y Acreditación* (ANECA), *Comisión Nacional para la Evaluación de la Actividad Investigadora* (CNEAI), *Consejo Superior de Investigaciones Científicas* (CSIC), *Instituto de la Mujer* (Ministry of Labour and Social Affairs), *Unidad Mujeres y Ciencia* (Ministry of Education and Science) and a Vice-Rector of Research at a state university. The researchers were chosen from different geographical areas and institutions, and came from the universities of Oviedo, Seville, Madrid, Tarragona, Santiago, and from the CSIC. Their disciplinary backgrounds are mostly Philology (literature, language), History, Sociology, Economy. The projects were part of the R&D Plan, in some cases the gender studies programme, and coordinated from universities or the CSIC.

As a majority of interviewees preferred not to be cited by name, we have coded all interviews for the quotations as follows:

I = member of an institution (not involved in research activities)

R = researcher (not involved in an institution at board level)

IR = member of an institution and researcher

Attached to each letter code is a number, from 1 to 12, which refers to the chronological order of interviews.

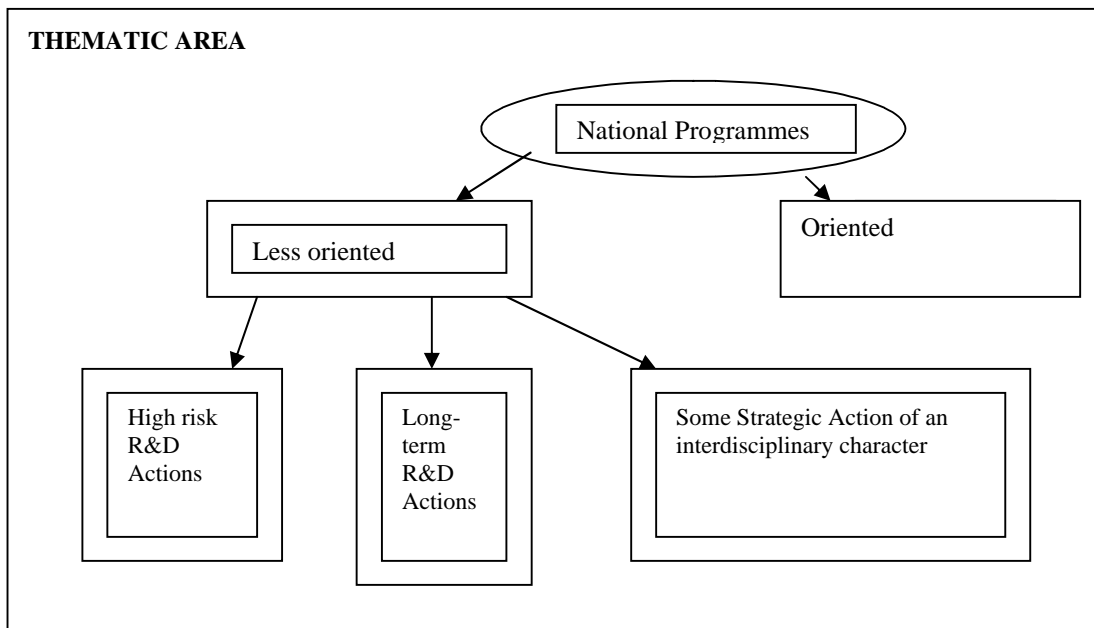
As will be shown along this report, interdisciplinary projects are not common (or, perhaps crucially, not visibilized), and are not the natural consequence of policy statements. The reflection on interdisciplinarity, though obviously happening at certain decision-making levels at specific historical moments, and present in the minds of some of the researchers, is not widespread, nor has it become a distinct issue for the majority of the research community in Spain.

1. INTERDISCIPLINARITY IN THE SPANISH RESEARCH STRUCTURE

1.1. The National R&D Plan (Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica 2004-2007)

The 2004-2007 national R&D Plan followed an evaluation of the previous (2000-2003) Plan, which had shown, among other issues, the extent of the exclusion of the areas and researchers unrelated to its directives of prioritization. The report also stated that “Despite the discourse on the need to promote multidisciplinary and collaborative projects, the reality is that they are penalised, as regards funding, with respect to those formed by small groups” (p. 7). In consequence, it recommended favouring “the development of interdisciplinary groups by coordinating the actions of the National Plan with those of other Ministries and programmes” (p. 13) together with “coordinated projects that allow the creation of groups with a wider critical base, and the sharing of resources and complementarity of research lines”; it also suggested more support for meetings and seminars which may “favour the creation of interdisciplinary groups” (p. 14). These recommendations were reflected in the design of the new R&D Plan, *Plan Nacional I+D+i 2004-2007*, which alludes, in Chapter 4, to changes in the management structure (coordination between programmes) “with the aim of creating a space for interdisciplinary proposals” (p. 42). Further specific reference to interdisciplinarity appears in the thematic areas and the calls for projects.

National R&D Plans are divided into thematic areas, each of which includes a specific number of national Programmes (such as the Humanities and the Social Sciences Programmes), which may have different degrees of orientation in their priority themes and actions: high risk R&D actions, long-term R&D actions and interdisciplinary strategic actions. Strategic actions are “a group of interrelated R&D activities which share common goals to be achieved in a medium term. This requires the identification of concrete and well defined objectives and an action plan characterized by the development of coordinated R&D projects, in order to favour the achievement of the expected results” (p. 47). This is the category which makes possible the Strategic Action for the Encouragement of Equal Opportunities between Women and Men (*Acción Estratégica sobre Fomento de la Igualdad de Oportunidades entre Mujeres y Hombres*), co-funded by the *Instituto de la Mujer*. It is an action located within the thematic area of Humanities, Social Sciences and Economics, composed by the two National Programmes which constitute the focus of this report: the National Programme of Humanities and the National Programme of Social Sciences, Economy and Law.



National R&D Plan: structure of actions within a Programme

National Programmes delimit their own disciplines, which do not generally overlap except in a few cases which are pointed out as borderline cases. Thematic priorities are identified for each National Programme and, within them, research themes are proposed. These thematic priorities aim at being broad research themes which can be analysed from different disciplines. In the Humanities Programme, certain disciplines are considered to be “of interdisciplinary nature” and in proximity to the Humanities (Librarianship, Documentation, Archives, Geography, Anthropology).

In both the Humanities and the Social Sciences Programmes, interdisciplinarity is mentioned as a challenge and as an objective. It is relevant that in the Social Sciences Programme objective c) is “to improve the interdisciplinary focus of research: promote interdisciplinary projects and the enrichment of theory and analysis with the contributions of the diverse social, economic and legal sciences; create centres or groups of reference with a clearly interdisciplinary structure to promote collaboration between researchers of different disciplines”, but then, objective d) is “to favour the use of rigorous and innovative methodologies, appropriate to the nature of scientifically relevant issues: to promote the development of advanced methodologies in accordance with the diverse disciplinary realms” (p. 462). This coexistence foreshadows one of our findings about the understanding of interdisciplinarity in Spain: it is practised as a sharing of knowledge and results, but not usually as an integrated mode of research or a means of overcoming disciplinary boundaries or exchanging and adapting research methods.

The Programme for Humanities states in the preliminary “Justification of the Priority of the Programme” that, together with other actions, such as internationalization,

“we must also tackle interdisciplinarity, [a subject] in which there is still a long distance to be covered” (p. 446). Two reasons are given for interdisciplinary research: first, “the need to study social phenomena from the highest possible number of perspectives in order to understand them in all their complexity” (p. 446; this is illustrated by an example of the 6th EU Framework, priority 7); second, the fact that, “due to its own nature and tradition, research in the Humanities transcends its strict field and becomes an indispensable element in the configuration of other disciplines” (p. 447). This preamble goes on to state as one of the “challenges” faced by the programme that of “promoting the interdisciplinary approach to research” (p. 447).

Each National Programme also contains a section explaining its relationship with other National Programmes, as recommended by the evaluation of the 2000-2003 R&D Plan among the actions to promote interdisciplinarity. Those of Humanities and Social Sciences are predictably described as related, and thematic examples, such as cultural identities or globalization, are provided. The relationship with other Programmes might be less obvious: in the Humanities, one of those related is the National Programme for Computer Technologies, and a thematic priority is “Applications of linguistics and language industries”. Interdisciplinarity is explicitly mentioned within this priority, together with “socially demanded” objectives (p. 451) such as the development of ICT programmes for language teaching or for recognition of the human voice, or to improve the relationship between “man” (sic) and machines. The understanding of interdisciplinarity is here mostly an idea of collaboration between disciplines to achieve a common practical or applied goal.

The directives of the *Plan Nacional del I+D+i 2004-2007* were materialised in the legal document regulating funding and calls for projects, published in 2004, and applicable throughout the duration of the Plan (*ORDEN ECI/4073/2004, de 30 de noviembre, por la que se establecen las bases reguladoras de la concesión de ayudas para la realización de proyectos de investigación en el marco del Plan Nacional del I+D+I 2004-2007*). This legal document states the conditions for funding, evaluation and application for R&D projects, and its first paragraph reiterates the general objectives of the National Plan: to promote quality research, to break the tendency of the fragmentation of research groups, etc, and “to promote interdisciplinary research capable of mobilizing complementary knowledge of diverse fields” (*BOE n° 298, 40691*). The aim is therefore to produce “complementary knowledge”, under the assumption of the existence of distinct disciplines which should work together and share their respective findings, not necessarily sharing or affecting methods. Again, this formulation prefigures answers in our interviews about “interdisciplinary research”: scholars from different backgrounds come together to work on a specific theme, carry out their part of the research and put together their conclusions. While this process may blur disciplinary boundaries, particularly for individual scholars, it does not affect the overall system, which remains strongly disciplinary in structure. The tendency towards disciplinarity is most noticeable in evaluation by peers, which inevitably follows the disciplinary *áreas de conocimiento* of the Spanish university system, although at times compensated by multidisciplinary committees or boards who make the final decision.

1.2. The Strategic Action for Research into the Promotion of Equal Opportunities Between Women and Men.

Promoted by the *Instituto de la Mujer* (Institute for Women's Issues, an autonomous body dependent on the Ministry of Labour and Social Affairs which aims at the promotion of social equality for both sexes and the full participation of women in political, cultural, economic and social life) the Strategic Action for the Promotion of Equal Opportunities between Women and Men (*Acción Estratégica sobre Fomento de la Igualdad de Oportunidades entre Mujeres y Hombres*) is linked to the National R&D Plan, and the Humanities, Social Sciences and Economics Thematic Area. This research programme began in 1996 in a less integrated position within the National R&D Plan, but has gained ground within national research and has funded an important number of projects. The programme (or more strictly speaking, 'strategic action') allocated a specific value in points to "multidisciplinarity" in its 2005 call for proposals: one of the criteria for evaluation is the "appropriateness of the size, structure and dedication of the groups... and their interdisciplinary character". While the real value in terms of points is low (8 out of 100 for different aspects of the group, including interdisciplinarity), it is the explicit reference among the criteria that makes the call unique, as references to interdisciplinarity rarely go beyond statements of policy. A reference to "multidisciplinarity" was present in the first call, published in April 1996. This should not come as a surprise, as the research promoted by this body is very result-oriented, "applied" research, and its "problems" are certainly of a "complexity" that, in the terms of the National R&D Plan, may require multiple perspectives.

The selection of the projects promoted by the *Instituto de la Mujer*, as in most other actions or programmes, has two stages: the first ("academic") is carried out by the national agency for evaluation of research, ANEP, which assesses the quality of the project, the research group, and the expected results; this phase may find a disciplinary-based perspective, given that gender or Women's Studies is not a recognised discipline; the second phase involves a committee which evaluates appropriacy to the priority areas of the programme. However, and despite the interdisciplinary tendency of a field like Women's Studies and the specific value given to "multidisciplinary groups" in the assessment process, a general look at the projects funded by the *Instituto de la Mujer* (listed on its web page, and made available to us by the Institute as a complete document for this report) reveals mostly discipline-based research, mainly in the areas of the social sciences, as the priority lines favour projects related to gender policies and the implementation of equal opportunities in very specific areas, such as violence against women or the labour market. This seems more a consequence, in this case, of a disciplinary habit on the part of the researchers, perhaps added to an awareness of the career hindrance present in the embracing of interdisciplinarity.

1.3. CSIC (Centro Superior de Investigaciones Científicas)

The CSIC is a national research body, created in 1939, with a number of sites across the country. Its researchers are appointed by procedures which are similar to those used for the appointment of university staff (within the civil servant system), but are dedicated exclusively to research in priority areas and projects. It is currently organized into eight Scientific-Technical Areas: Humanities and Social Sciences; Biology and Biomedicine; Natural Resources; Agricultural Sciences; Physical Science and Technology; Chemical Science and Technology; Material Science and Technology; Food Science and Technology. The CSIC collaborates with universities, public research bodies, companies, professional associations, foundations and regional, provincial and local administrations. Its 2004 report (*CSIC, un siglo en el sistema español de I+D* http://www.csic.es/documentos/LIBRO_PRESENTACION_ES.pdf) shows an important presence of its research activities within the national context, as may be expected of an institution dedicated exclusively to this purpose.

The multidisciplinary character of the CSIC is explicitly stated in its web page: “due to our multidisciplinary character, we embrace all fields of knowledge, from basic research to the most advanced technological developments.” It poses as its first duty “Multidisciplinary scientific and technical research”. The *Subdirección General de Programación, Seguimiento y Documentación Científica* (General Subdirection of Programming, Monitoring and Documentation), which is responsible for the management and application of research projects within the CSIC, refers researchers to “integrated projects”, which are part of the R&D Plan, and are defined as “the conjunction of diverse R&D actions which aim at producing a quick advance in a sector or theme which, due to its complexity, requires a big interdisciplinary effort or which respond to a socioeconomic problem which requires an intense and guided action in a concrete period of time” (<http://www.csic.es/hispano/proyect.htm>).

The CSIC appears to be the body with the longest tradition of interdisciplinary thought or policy in the country. While the (rather low-key) debate around interdisciplinarity was initiated in Spain really in the 1990s, multidisciplinaryity was mentioned as part of the character of the CSIC in the law of 1977 which updated the structure of the institution (Royal Decree 3450/1977, of 30th of December), making room for an easier flow of information and transparency in management while maintaining the diversity of its research institutes, centres and groups. This document refers to multidisciplinaryity in relation to the coordination of efforts (the sense in which inter- and multidisciplinaryity are mostly mentioned in the Spanish context):

... the institution established through this Royal Decree aims at facilitating the coordination of efforts, means and resources of all kinds so that the CSIC, which houses basic or applied, but preferably oriented and multidisciplinary,

research, may serve the wide priority objectives, whether proposed by the Government or by this institution itself in the framework of the national science policy.

In the later Royal Decree (1945/2000, of 1st of December) by which the Statute of CSIC is approved, this same line is stressed and, again, multidisciplinary is alluded to: "... it is obvious that the CSIC, due to its historical tradition and its current reality, must be configured as a scientific-technological institution with a multidisciplinary character...".

As one of the actions to carry out this programmatic line, the CSIC has constituted 14 *Interdisciplinary Thematic Networks*. These contain a set of *nodes* in which researchers and resources are integrated in order to work in coordination through "the interaction of their respective contributions and making full use of the synergies derived from these" (http://www.csic.es/redes_tematicas.do). Nodes which share common or similar action lines constitute an "area of work". Each Network has a general coordinator who, with the persons responsible for each node, establishes the general scientific framework and the internal structure of the work. A Network is constituted with a will to continuity, and not as dependent on contingent funding opportunities. The two networks which are more specifically relevant to our report are the "Thematic Network on Historical and Cultural Patrimony" (the only one to include disciplines from the Humanities) and the "Thematic Network on Political, Economic, and Social Studies on Science, Technology and Innovation," which studies public research in Spain since 1986.

While the CSIC does not offer a definition of interdisciplinarity as such, it does speak of three factors that may advise the creation of a thematic network, and which may be summarised as follows:

- 1) The existence of a scientific problem which is best approached from an interdisciplinary perspective.
- 2) The need to bring together experience and knowledge disseminated in different centres for a specific problem, not necessarily interdisciplinary.
- 3) The existence of a specific problem or thematic line for which there is insufficient capacity or a wide enough community of researchers, where a thematic network may offer flexibility and resources needed.

These definitions and justifications show a problem-oriented, instrumental conception of interdisciplinary research, which coincides with the implicit definitions in national R&D Plans and in the answers offered by interviewees, as we shall see. The experience of the CSIC shows that if interdisciplinary, or at least multidisciplinary, research is promoted and an appropriate structure is developed, it is more likely to take place. Interdisciplinarity is understood as "part of the nature" of the institution, as one interviewee states, and consequently the structure of the institution and the distribution of resources favour

interdisciplinarity networks, although perhaps its implicit or “natural” presence in the organization may also mean that it is taken for granted rather than discussed theoretically or methodologically.

2. EVALUATION AND INTERDISCIPLINARITY

Evaluation procedures are a crucial point in promoting interdisciplinarity in research programmes and allowing them to materialize in funded research projects. Nevertheless, despite repeated references in the policy statements of the National R&D Plans, and in its derived National Programmes (including the above-described Humanities and Social Sciences Plans), and in the yearly calls for projects, no provision is made in the evaluation process for assigning value to interdisciplinary groups or methods. Neither the regulating norms made public in December 2004 (*Orden ECI/4073/2004*, published in the BOE 11-12-2004) nor the 2004 and 2005 call for projects under the National Plan (*Resolución 14-12-2004*; *Resolución 9-12-2005*), include specific points for interdisciplinarity in the evaluation criteria. “Internationalization” is, in contrast, taken into account very specifically, with an allusion to participation in EU projects as one of the criteria. Only the *Acción Estratégica* for Equal Opportunities, the specific gender programme promoted and funded within the National Plan by the *Instituto de la Mujer* allocated specific points to interdisciplinarity in one of the ten criteria for evaluation (8 points out of the total 100 in its 2005 call). This lack of reinforcement through evaluation for funding, added to the assignment of projects to specific fields in the application and evaluation procedures, although qualified by references for the possibility of approach from other fields and the interrelatedness of national programmes (*Programa Nacional I+D+I 2004-2007*, pages 455-56, 469-70) cancels out pronouncements on interdisciplinarity, leaving them at the level of theoretical rather than effective policy.

The various evaluation and assessment committees and agencies are organised from a disciplinary perspective, and tend to function with a disciplinary habit, although decision committees (partly for reasons of economy) are relatively multidisciplinary. This is true of the major assessment bodies: ANEP (which evaluates projects), ANECA (accreditation for HE, also assessing lecturers before tenure), CNEAI (evaluates research periods of individual academics), and regional agencies for QA and accreditation. The most relevant body for our purposes is the ANEP, as all applications for projects in national R&D calls are referred to this body for the preliminary and crucial “academic” evaluation.

The ANEP, Agencia Nacional de Evaluación y Prospectiva (National Agency for Evaluation and Foresight), was created by the Ministry of Education, under the State Secretariat for Scientific and Technological Policy, also responsible for the R&D Plans. It assesses the actions of the National R+D Plan and its outcomes. The evaluation process (established in the regulations of the Orden ECI/4073 of 30-11-2004) takes place in two phases. In the first, the ANEP makes a “scientific-technical assessment” of every application, asking at least “two experts of accredited scientific-technical level” to evaluate

- 1) the capacity of the coordinator and the research team and its results and experience in the theme of the project;

- 2) Scientific-technical contributions expected of the project: innovation, relevance to the general Programme;
- 3) Viability of the proposal: methodology, design of project, work plan.

In the second phase, a selection committee (different in each programme or strategic action) establishes the order of priority of the projects evaluated. This committee has a minimum of six members, is presided over by the Subdirector General of Research Projects (Ministry of Education) and experts from the ANEP, and administration and technical experts, appointed by the General Director of Research of the Ministry of Education. These committees, taking into account the previous evaluation by the ANEP, produce a prioritized list of projects for funding, with the following criteria:

- 1) appropriateness of the project to the programme, relevance and opportunity in comparison with other proposals;
- 2) size, composition and dedication of the research team;
- 3) previous results of the teams;
- 4) internationalization of activities; participation in EU R&D frameworks;
- 5) appropriateness of budget proposed;
- 6) dissemination plan.

The procedure is discipline-oriented in the initial evaluation, since the “experts,” whose first assessments are crucial for the decision of the multidisciplinary (or rather, more broadly disciplinary) committee, are chosen according to *áreas de conocimiento* (the official, restrictive and separate disciplines which govern academic life in Spain). Final decisions, however, are made for closeness to the objectives of the National Plans (hence the relevance of the inclusion of themes in the programmes) and by a mixed academic and administrative committee.

One of the official worries in this process of assessment seems to be the difficulty of “objective” measurement of merit, particularly in the Humanities, given the lack of generally accepted journal indexes. The 2004-2007 R&D Plan, in the Programme for the Humanities, lists among its “horizontal actions” a wider dissemination of results in society by means of general publications and the promotion and improvement of academic journals (454). It makes particular reference to the fragmentation of journals of reference, a fragmentation which may lead to “disciplinary imperialism” or the equally “dangerous” “disciplinary autism”. It expresses support for the establishment of citation indexes that avoid the American bias (European Citation Index for the Humanities, promoted by the ESF) and the obstacle of being outside the English language (LATINDEX, promoted by Latin American countries). The social sciences programme takes a slightly different perspective, considering the “alarming problem of the dissemination of research”, which is

made through “Spanish journals characterized, generally speaking, by localism, lack of filters and quality control, and the lack of theoretical ambition in a substantial part of the work published” (468). One of its “horizontal actions” has as its objective the improvement and internationalization of journals and results of research. So far, however, initiatives have been concentrated on establishing a discipline-based list (for each *área de conocimiento*), following enquiries among peers, which often baffle researchers. The questionnaires listed only discipline-specific journals to be assessed, and allowed little space for suggestions of interdisciplinary journals (Román, 2002). In other evaluation processes, such as the assessment of individual research leading to the recognition of excellence every six years, the references are the Social Sciences Citation Index plus European and national lists of relevant journals accepted by the National Commission for Evaluation of Research Quality (CNEAI) and for the Humanities, a series of international bibliographies (Philosopher’s Index, Bowling Green State University; Repertoire Bibliographique, Leuven University) plus national catalogues such as the DURSI (created by Catalan universities for their own evaluations), subject to approval by the CNEAI.

Even when lists of publications are relatively established, they are strongly discipline-based, and one of the interviewees relates a case in which a young researcher was assessed negatively because an essay was published in a reputed journal but “marginal to the *área de conocimiento* (discipline) involved.” It is also interesting to note that no reference is made, in this text or in other documents discussions, to the publication of books (or, as they tend to be known in Spanish, *monografías*) in prestigious academic publishers, which are so often the most valued and consulted publications in some areas of the Humanities and, according to our interviews, frequently the outlet for interdisciplinary projects.

3. PERCEPTIONS OF INTERDISCIPLINARITY AT INSTITUTIONAL LEVEL

The National R&D Plan and its programmes, as we have seen in the previous sections, promote interdisciplinarity at the level of document statements and tentative inter-programme action, but the evaluation and selection mechanisms associated with research funding do not seem to encourage interdisciplinarity actively through either specific programmes (requiring interdisciplinarity) or concrete assignment of weighting.

For this section of the report we interviewed (personally or through a written questionnaire) persons who hold relevant positions in some of the bodies involved, at different levels, in the structure of public research: ANEP, ANECA, universities, Institute for Women's Issues and CSIC. We asked questions about the understanding of interdisciplinarity in their respective institutions and how it was promoted or hindered within their structure. We analysed their responses considering, not only the "official position" with regard to these issues, but also the personal ideas and understanding of interdisciplinarity by the interviewees, as their point of view both reflects that of the institution and influences its practices.

First of all, it is fundamental to state that none of the institutions analysed hold a common specific definition of interdisciplinarity. When asked about this subject, all interviewees gave their own personal understanding of the term, which is discussed at greater length later in this report (point 3). This also applies to the distinction between inter-multi- and transdisciplinarity, the last term being the most baffling (all interviewees said that it had never been used, either by them or their institutions). The following quotation is representative of the general ideas regarding this issue:

I'm not sure about the differences between "interdisciplinarity" and "multidisciplinarity". Interdisciplinarity seems to refer to an activity that is not situated in any area, but in a space between various areas. Multidisciplinarity refers to the participation of several areas. I don't think that this distinction is very relevant. Anyway, the treatment [of this kind of research] must be the same: to put together the knowledge and experience of more than one area to achieve a goal. We have never used the word "transdisciplinarity" (IR-5, p. 3).

The interviewees tended to think that the distinction between these terms and their definition are "not relevant", and they laid the emphasis on the importance of the outcomes of research. The aims of a research project constituted the fundamental aspect that must be taken into account and, if these were relevant, the initiative should be supported, independently of the disciplinary or interdisciplinary character of the approach used. In this sense, if a research topic needs to be addressed from different points of view (i.e. disciplines) in order to reach the expected results, then multidisciplinarity or interdisciplinarity is valued as a positive aspect and must be promoted.

However, when asked if interdisciplinarity was considered in their bodies as a sign of excellence, most interviewees did not consider multi- or interdisciplinarity as “intrinsically positive”:

Not necessarily. It is required for some themes, but not all research subjects require this focus. Interdisciplinarity per se does not guarantee quality (IR-1, p. 3).

Not necessarily. Excellence is valued fundamentally in relation to the results achieved, the originality and the added value of research (IR-7, p. 3).

It might depend on the cases. Some disciplinary projects gain deeper knowledge because they are carried out in this way, while the excellence of other projects conceived in an interdisciplinary way lies precisely in the fact that they are interdisciplinary (I-6, p. 4).

These answers are related to the emphasis put on research outcomes and not on research methodologies. Underlying this discourse there is the idea that promoting interdisciplinary research would constrain the “freedom” of researchers to choose the way in which they want to approach a research project, as the following quotations show:

The project has to emerge spontaneously from the researchers, and once the collaboration is established, the necessary resources must be allocated. I don't think it is a good policy to offer specific resources for projects or activities with the condition that they are interdisciplinary. The result of this would be that researchers would create projects and collaborations artificially to obtain funding. (IR-5, p. 5)

... in my opinion, more important than this distinction [between inter-, multi- and transdisciplinarity], what is relevant to approach a research project in all its complexity and, taking into account the differences between research projects, to avoid prototypes that might limit the approaches and results. (IR-7, p. 3)

These comments are in line with the way interviewees talked about interdisciplinarity in relation to the structures of their institutions: the general idea is that they do not specifically promote interdisciplinary work, but they do not specifically hinder it either. However, two persons (one from the ANEP and one former Vice-chancellor for Research in a state university) stated that structures might pose some problems in this sense, although the barriers were not impossible to overcome:

The ANEP takes [interdisciplinarity] into account indirectly, but its structure does not favour it. However, the people in charge try to solve the problems through internal collaboration. ... the distribution of results, in theory, hinders interdisciplinarity. (I-6, p. 1)

Multidisciplinarity is not favoured because the [university] structure is oriented towards departments and centres associated around a common discipline, but there are no specific difficulties if research groups decide to develop a multidisciplinary activity. (IR-7, p. 1)

However, a closer analysis of structures and documents (see National Report and previous points of this report) and the experiences of researchers (see point 3 of this report), offer a different view in which obtaining funding for interdisciplinarity research is a hard task that encounters numerous barriers. And, despite the repeated discourse about the importance of quality and expected results of research projects, one of the interviewees from the ANEP admitted that interdisciplinary research might face greater barriers than traditional disciplinary proposals:

There is a common problem: these [interdisciplinary] projects are usually more risky due to their novelty and the lack of previous published results so, sometimes, they are evaluated negatively if this criterion is considered as negative. (IR-5, p. 6)

There were two concrete cases in which bodies favoured inter- and multidisciplinary research: the Institute for Women's Issues and the CSIC. In the first case, it referred to the Strategic Action for the Promotion of Equal Opportunities between Women and Men, which values multidisciplinary as one of its evaluation criteria. In the second case, the CSIC is, as has been explained, a special case on the map of Spanish research, since it is a body situated halfway between a University and a research institute or network, gathering scholars devoted to research activities, which gives the institution more freedom to escape disciplinary structures. However, these bodies are not in charge of the national research structure, but have to go through the general aim for funding; the first assessment of proposals for the call of the Institute for Women's Issues is conducted by the ANEP, and the researchers from CSIC apply through the regular R&D calls. Thus, despite efforts of these bodies in the promotion of inter- and/or multidisciplinary research, the national trend that favours disciplinarity still affects them, as does the disciplinary habit of the researchers themselves:

CSIC tries to promote interdisciplinarity through the creation of interdisciplinary groups and projects ... its structure does not hinder it and, actually, there have always been interdisciplinary collaboration; however, there is still the burden of cultural tradition, which does not help. (I-6, 1).

4. INTERDISCIPLINARITY FROM THE RESEARCHERS' PERSPECTIVE.

All but one of our interviewees are involved in research activities and eight researchers (including some of those answering also as administrators), have participated in some kind of interdisciplinary research. Although the themes of the research projects in which our interviewees participated were diverse (the study of public research in Spain, the privatization of public enterprises in Spain, the future expectations of teenagers, European women writers and thinkers, female archetypes in literature and history, and –more marginally—a science project), their comments about their experiences and their opinions were very homogeneous with regard to interdisciplinarity. We analysed their responses paying particular attention to how they defined interdisciplinarity, their reasons for choosing an interdisciplinary approach, the difficulties they found during the research process and the implications of interdisciplinarity.

As we have seen, there is no common or “official” definition of interdisciplinarity in Spain. This concept is quite new to the national academic tradition and, although it is mentioned in a number of policy documents, the term is not generally discussed nor is there a general debate on the matter. As some interviewees at institutional level said, interdisciplinarity is often “taken for granted” (see point 3 of this report). The responses of the researchers interviewed were generally rather vague when asked to define the term and most stated that they had not given much thought to the issue before. The distinction between inter-, multi- and transdisciplinarity was not considered relevant or, when found interesting, was unknown. All interviewees stated that interdisciplinarity had to do with the interaction, combination and/or coordination of different fields of knowledge and disciplines. However, how this interaction is to be achieved was less clear. The sharing of knowledge when working in an interdisciplinary manner was stressed by all interviewees, but references to methodological issues were not so common and, in fact, in most cases they had not even been considered:

It seemed interesting to work together, but we didn't think about methodological issues, etc. We thought it was important to study certain female figures from a historical and cultural-literary perspective and see the connections and differences. (R-11, p. 3).

When asked about their motivations for working in an interdisciplinary way, all interviewees pointed out that it was a need derived from the nature of their research subject.

The character of the research required the use of a global focus to analyse the problem taking into account the implications of other knowledge areas and perspectives of analysis. (IR-7, p.3).

[the use of an interdisciplinary focus came from] the need to have more points of view to analyse a complex theme. (R-9, p.3).

They stressed the importance of working with researchers from different disciplines in order to approach the theme of research in the most effective and accurate way. From this we can conclude that they found that their own discipline was not enough for this aim, although this was only pointed out explicitly by one of them:

Sociology had conceptual, analytical and methodological limitations... [the interdisciplinary focus] had lots of advantages since we could use the points of view from other disciplines to go deeper and clarify analytical issues that, in sociology, are not clear enough or can't be used with the necessary rigour (IR-8, p. 2).

Another interviewee also remarked on how she felt the need for a different knowledge that she could not access in her own discipline:

We had an idea based on the results of our research, but to make it work we needed to interact with experts from a totally different area that was non-accessible through our knowledge ... [interdisciplinarity] was the only way to achieve our objectives. (IR-5, p. 4).

Thus, interdisciplinarity is usually resorted to when researchers need “more” than they can find in their own disciplines to achieve the objectives of a research project, and therefore the impulse seems instrumental. This use does imply that the boundaries of disciplines are necessarily challenged or criticized. The researchers talk, mostly, about a collaboration when approaching a complex issue, but what transpires from the interviews is that the work tends to be compartmentalised and is brought together by results.

This can also be seen in the way the dissemination of research results is done. Publishing is the most common way of disseminating the outcomes of a research project, along with the presentation of papers in conferences. Web pages are not common and, when they exist, usually provide only a brief description of the project and a list of the researchers involved. The publications can be separate articles in an academic magazine or a book which contains a compilation of articles. In some cases, each one of the researchers/disciplines has its own section in the book or issue, linked by the research topic, amounting to a multidisciplinary approach to a certain theme, rather than an interdisciplinary analysis. However, as pointed out, books offer a certain freedom from more strictly disciplinary journal constrictions, and are a frequent vehicle for dissemination.

When asked about the difficulties of working with researchers from different disciplines, the interviewees, perhaps unpredictably, did not find many. Most of them answered that when researchers share common goals and similar perspectives the project goes smoothly. This might be due to a low degree of implication in interdisciplinary work, as it tends to consist of collaboration between researchers from different disciplinary

backgrounds with the aim of sharing knowledge and points of view about a common subject. This way of working does not problematize the disciplinary structure and, therefore, does not pose problems during the research process, since work is fragmented along disciplinary lines. However, there is some evidence that when debates during the research enter the realm of methodology and question the procedures of different disciplines, tensions begin to emerge. Some interviewees referred to this issue in a very subtle way, when they stated that they found some difficulties in harmonizing “different working rhythms ... [and] the dynamics of the research community” (IR-1, p. 5) or that “a bigger effort of communication and coordination [was] required” (IR-7, p. 4). In other cases, the disciplinary differences were identified more clearly:

There were some methodological differences, related to the relevance of documentation (History) against theorization (Literature) ... Historians had a very strong tendency to a strict interpretation of specialization and disciplinarity, while philologists were more inclined to cross the disciplinary boundaries (R-11, p. 4).

Interdisciplinarity, in this sense, was considered a threat to traditional disciplines, because it challenges fixed ideas and questions what are seen as fundamental issues. One of the interviewees expressed how she had found problems inside, and not outside, her discipline:

In my experience, it is not usual to find disagreements between researchers from different disciplines. I found a lack of understanding amongst my own colleagues from sociology with a “mainstream” point of view. ... Those who belong to the so-called sociologic orthodoxy do not accept different approaches. Those who have the power in the discipline reject as non-sociological what is done in an interdisciplinary manner. They reject publications, fail transdisciplinary researchers in habilitation processes, etc... (IR-8, p. 4).

The issue of challenging power structures and the consideration of interdisciplinary work as a site of struggle was described more directly by another interviewee: “Interdisciplinarity is another battlefield, academic and vital. But (...) I think that interdisciplinarity is badly regarded socially and politically: it is frightening because it might broaden the minds of electors too much” (R-9, p. 5).

Thus, interdisciplinarity is not seen as an innocuous issue that only matters at discourse level, as it seems to be considered mostly among those involved in academic institutions (see point 2 of this report). Its implications destabilize a structure which, in Spain, is very large and static and where power relations are very important. The close relationship between universities and the state means that academic and political interests are intertwined and it is extremely difficult to introduce changes in the structure from below. In this sense, as we have seen, multidisciplinary is less problematic than interdisciplinarity (particularly conceptual interdisciplinarity) because the second

challenges the understanding and structure of the academic world and the way knowledge is conceived.

It is interesting to note, in this light, how the relevance of distinguishing between inter- and multidisciplinary is denied among those involved in the institutions (although probably unintentionally, and not only by them) and how a debate about the implications of these definitions has not been promoted. If we take into account how interdisciplinarity might undermine the power structures of the academy and its politics, it is not surprising that *multi-* instead of inter-disciplinary research is favoured, even though penalized in comparison with disciplinary work, as may be the case in the evaluation and selection of projects. The promotion of multidisciplinary saves the face of institutions, in view, for instance, of EU directives, while preserving the actual structures. In this sense, the inclusion of interdisciplinarity in the current National R&D Plan, closely related to the process of European harmonization and the building of the European Research Area, supports this reading. Since the EU insists on the need to promote interdisciplinarity, it is done in the least problematic manner, encouraging collaboration between areas, but without pursuing further implications.

CONCLUSIONS

- The findings derived from the qualitative data **confirm** the conclusions of the first national report. Interviews offered an interesting insight into how interdisciplinarity is understood and thought of in Spain. This was particularly relevant since we interviewed persons **responsible for the evaluation and accreditation** processes of research projects, so their opinions are well informed and influence the kind of research promoted in the country.
- Interdisciplinarity, usually, is **not clearly understood and/or reflected** upon. Sentences such as “it is taken for granted” abound. The definition of interdisciplinarity or the distinctions between inter-, multi- and interdisciplinarity are not found particularly relevant. There is a certain tendency to produce **interdisciplinary knowledge** (through the kind of work carried out in Spain it is possible to produce this kind of knowledge, understanding it as a common theme or subject that is analysed or approached from different points of view and disciplinary perspectives) and **interdisciplinary methodologies** (this is not common, each discipline uses its own methods and these are not shared. Actually, using methods from a different discipline might be a source of criticism from scholars of your main discipline).
- The consensus is that **structures** and/or funding do not usually “promote”, at least explicitly, interdisciplinarity, but do not hinder it either. Interdisciplinarity, according to some interviewees, should not, or need not, be promoted specifically because, if the research subject “needs” an interdisciplinary approach, researchers will “naturally” analyse it that way. To define and/or reward interdisciplinarity (a necessary step for funding?) would constrain the “freedom” of the interdisciplinary approach or encourage contrived projects.
- There are a number of **invisible barriers** that hinder interdisciplinary work. These “glass ceilings” are more readily acknowledged by the researchers who have attempted interdisciplinary work than by those responsible for the research policy, which seems to indicate a **need to open a debate** and a process of reflection about the nature of interdisciplinarity, its objectives and forms of promotion.
- Current interdisciplinary research takes place very erratically and its results are spread in all sorts of publications and reports. It is hard to establish a strong stream of interdisciplinary work and, there is no sense of community among those working in this manner, also hindering a debate about the issue or a bank of knowledge about problems, solutions, methodologies, etc. of interdisciplinary work in Spain.

- There are more possibilities for the development of interdisciplinary work in the **CSIC** due to its tradition in this area. The **CSIC** has a distinctive approach, favouring interdisciplinary work, although perhaps mostly in the Interdisciplinary Networks. Since the beginning this body had a **structure** that favoured this kind of research, making specific room for interdisciplinary work, which is “expected” to happen. However, research projects must apply for funding within the national R&D Plan, which is not very interdisciplinarity-friendly in its structure. One of the aims of the CSIC is the internationalization of research and the relationship with researchers abroad. Given the wider practice of interdisciplinarity in the EU and other countries, this might be another feature that explains the promotion of interdisciplinarity in institution.
- The programme (“strategic action”) promoted by the *Instituto de la Mujer* rewards interdisciplinary research in the evaluation of projects, but its results seem rather limited by the general structures and academic disciplinary habits. Some projects carry out multi- and perhaps inter-disciplinary research, although the majority continue to be rather narrowly discipline-based and result-oriented.
- At the **project level**, the researchers who have worked in interdisciplinary projects (usually they are multidisciplinary) value the experience as **positive** precisely because it blurs the disciplinary borders and the sharing of knowledge from different disciplines was enriching. They did **not** find any important **difficulties** in working in an interdisciplinary way, mostly, it would seem, because they were carrying out **multidisciplinary** work or **instrumental interdisciplinarity**, rather than cognitive interdisciplinarity.

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