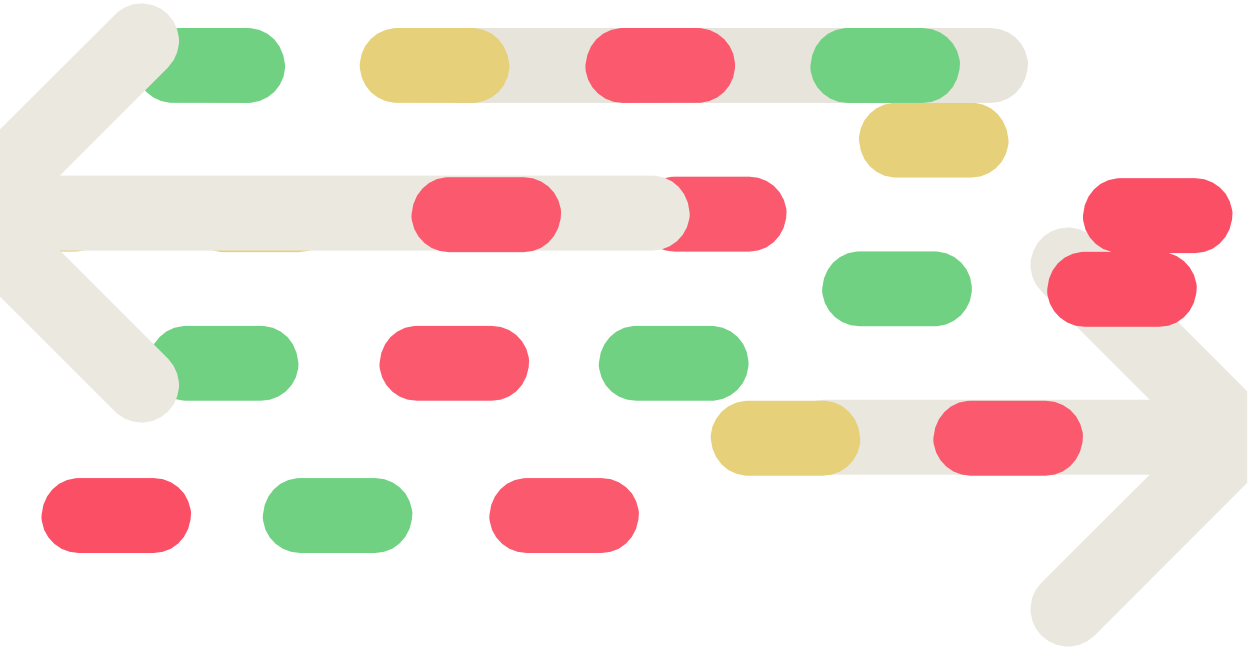
The University in the framework of the 2030 Agenda:

NOTES FOR INTEGRATING THE SUSTAINABILITY OF LIFE INTO UNIVERSITY TEACHING AND RESEARCH



Economistas sin Fronteras

The University in the Framework of the 2030 Agenda: Notes for Integrating the Sustainability of Life into University Teaching and Research.

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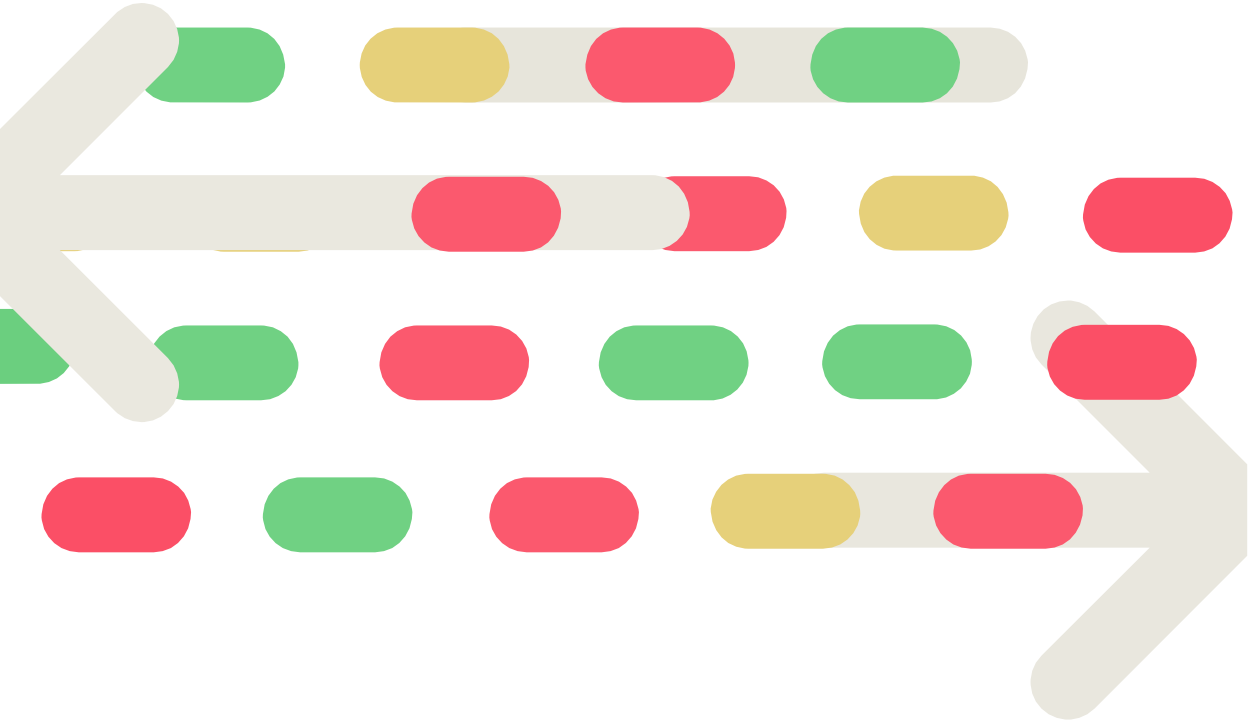
Executive Summary



Economistas sin Fronteras

The 2030 Agenda is the declaration with which countries commit to integrating sustainability into all political, economic and social processes with the greatest urgency while transforming the current development model. This commitment inescapably extends to universities as centres for the generation and transmission of knowledge.

This research ponders the implications of integrating the sustainability of life on university teaching and research.

A question whose only possible answer is to identify and address a paradigm shift that allows us to overcome the inadequacies and contradictions of the hegemonic developmentalist paradigm that has been in place for decades, both in the field of knowledge and in social, economic and political practices.

The focus of this work does not limit itself to incorporating sustainability into economic, social and political processes; it also includes a critical review that allows us to understand to what extent the results of these processes have been and are the causes of the current threats to the sustainability of life. The purpose of this work is, therefore, to investigate the mistakes made and to suggest ideas for integrating the sustainability of life at the centre of research and teaching. At the very least, it aims to open and expand possibilities so that research and teaching action in universities constitutes an appropriate response to the profound eco-dependence of all human activities in these times characterised by breached planetary boundaries and multiple crises.

The dimension of knowledge: From epistemic failure to critical and political eco-integrative knowledge

It must be recognised that the evolution of knowledge in recent centuries has evolved out of an *epistemic failure* consisting of the construction of a reality on the margins of its eco-dependent nature, while ignoring the interactive and dynamic nature of its multiple dimensions.

The developmentalist paradigm is a sustained school of thought based on scientific postulates that have been hegemonic in academia and in political-institutional relations in recent decades.

The developmentalist paradigm is, in epistemological terms, the consequence of an anthropocentric position towards the world. It is expressed in faith in human reason's capability to isolate itself from the world in order to know the world; of a techno-optimistic vision of scientific knowledge and of an uncritical commitment to the primacy of economic growth and other considerations emanating from neoclassical and neoliberal economic thought. The developmentalist paradigm is a legacy of the Enlightenment paradigm, marked by dualisms, which gave rise to an endless number of sectoral approaches that united in an approach to analysing reality by compartmentalising it. This has been the foundation of a multitude of disciplines that advance by generating tracts of reality.

The academic and institutional pre-eminence of a certain school of economics for interpreting and prescribing the ideas of progress and development that have guided societies in recent decades is the main evidence of epistemic failure. This pre-eminence refers to the political dimension of knowledge. Awareness of the political aspect is essential when asking whether the

postulates of neoliberal economics are the most influential because of their epistemic strength and their ability to make predictions, or, as we argued, because they are accessories to the distribution of power and privileges that characterise our time. That distribution has been based on *epistemic injustice* which has systematically rejected the knowledge and veracity of diverse subjects, exercising discrimination based on particularly racist, sexist and classist prejudices.

On the other hand, we have numerous proposals for alternative knowledge, even on the margins of academia and the mainstream, that endeavour to overcome epistemic failure and to construct new epistemological positions and perspectives focused on the recognition of ecodependence. This could perhaps be done through integrating physical and chemical dimensions into economic thought, as does ecological economics; or by describing and quantifying fundamental planetary boundaries; or by pointing out the intrinsically interrelated character of reality, such as the critical schools of political ecology.

Taking into consideration the systemic and multidimensional nature of reality, several critical approaches aim to offer new frameworks of interpretation and scientific construction that acknowledge the situated character of knowledge and its purpose, contravening the modern idea of the neutrality of science and recognising the importance of thinking politically about ways of knowing.

The 2030 Agenda's direct appeal to the transformation of current development models requires theoretical approaches committed to change, to the opening of new possibilities rather than to the reproduction of theories limited to the resolution of isolated problems while making no revisions to hegemonic pillars and postulates.

In this sense, we can point to constructivist and structuralist approaches, thoughts situated from resistances and their counter-hegemonic knowledge. Feminist studies and decolonial visions constitute fundamental sustenance for the construction of new narratives that explore all efforts to orient themselves towards a new eco-integrative, pluralistic and comprehensive paradigm of the impacts that models and theories have on lives.

The new emerging paradigms assume the multidimensional consideration of reality, undertaking the search for views and perspectives that produce integrated and integral knowledge about it. The political, economic, social, environmental and cultural dimensions of reality require a renewed correlate, whose essential characteristics are its situated character and its political nature, as well as the progressive transition from multidisciplinary and interdisciplinary exercises to transdisciplinary practice.

In short, integrating the sustainability of life requires a profound critical review of the postulates about knowledge and about the sciences as their most institutionalised and influential product.

This is a revision that, at the same time, produces alternatives from a new position, one that is less anthropocentric and more cooperative, and is marked by an ecological spirit. It is a difficult transition that allows the emergence of eco-integrating paradigms to overcome the epistemic failure stemming from the particular evolution that history gave to the Enlightenment paradigm.

The structural dimension: From disciplinary reproduction to transformative knowledge

The political correlate of the epistemic crisis analysed here is expressed in the structures that determine the generation, expansion and transfer of knowledge in the University. They take a kind of mental and epistemic architecture that has consolidated a disciplinary logic operating on some elements of the scientific and university system.

This work focuses on the university system, although many of the issues analysed here also apply to the scientific system.

Both subsystems have evolved from the disciplinary boundaries that have differentiated objects of study, theoretical and doctrinal bodies, and epistemic communities. As a result, there has been a compartmentalisation of reality that makes it difficult, if not impossible, to address it in its full and multidimensional nature, given its interdependencies.
Disciplinary logic has had a significant influence on the ordering of university studies and lines of research, which confirms the absence of the sustainability of life, development studies or feminist studies as fundamental scientific concerns, as they do not fit into this disciplinary differentiation, given that they are aimed at an object of study that, due to its heterogeneous and multidimensional nature, transcends the disciplines.

Studies linked to these fields that are not recognised as areas of knowledge encounter difficulties in being believed and evaluated, and in participating in international exchanges. This consequently hinders the recruitment of teaching and research staff dedicated to these issues. Similarly, students are limited in their

approach and learning by the predominance of knowledge that corresponds to the historical and scholastic arrangements of the disciplines and that subordinate any multi-, inter- and transdisciplinary approach, which would be more in line with the learning needed to face the challenge of the sustainability of life in this time of multiple crises.

The plan for the introduction of sustainability in the curriculum of Spanish universities, adopted by the Conference of Rectors of Spanish Universities (CRUE) in 2005 and reaffirmed in 2011 and 2012, is the response to an ambitious vision that includes proposals for overcoming disciplinary logic. But it has not been effectively applied and it has a long trajectory in areas such as curriculum review, the incorporation of sustainability criteria in the recruitment and promotion of teaching staff or in the evaluation of research. These are matters that could have contributed to reversing the commodifying drift of the University, a global phenomenon that, naturally, affects the Spanish case.

The commodification of knowledge as a structural phenomenon refers to the commodification of the processes that generate it, of the processes to transfer it and to the weight of the market in the posture that objects, objectives and types of knowledge take.

This multifaceted process is reinforced by the scarcity of public funding and the growing competition from private capital in research and teaching. The private sector responds to market logic rather than to criteria of social utility or the common good.

Funding for research has historically been scarce in the Spanish system, although paradoxically its merits are more highly valued than those of teaching. Note that the language distinguishes between "*dedicating* time to research" and having a "teaching *load*". This shortage of funding has not prevented Spanish universities from reaching good positions in international rankings driven by competitive logic. Likewise, this competitiveness has historically rested on the overexploitation of research and teaching staff, particularly those with greater job insecurity and, among them, especially women.

Knowledge transfer is relegated to a subordinate place that entails an instrumental relationship with actors outside the University, deepening the gap between the University and society. The transfer work has been carried out according to a market logic following extractivist and instrumental practices instead of forming an institutionalised and regularised exchange.

Finally, in relation to the direction that knowledge is heading, co-optation by the publishing market is observed insofar as it reproduces the current hegemony of the impact factor of academic journals, a metric that is held out as the main criterion of quality.

This evaluation system that assigns academic merit and promotion tends to strengthen unidisciplinarity and avoid questioning and critical approaches that, despite being the foundations of scientific revolutions, meet with enormous difficulties when trying to follow guidelines of what can be published in journals with a high impact factor, which are increasingly publishing less disruptive work.

The process of commodification of knowledge and the system of evaluation and merit have important personal implications that are reflected on the lives of people who seek to generate and transfer knowledge in the university system. These professionals turn their curricula into a means of individual assessment, with devastating effects on health, causing discontent and disarticulating solidarity, cooperation and care through adaptation to the competitive and commodification logic that encourages individualistic practices.

Although there are already international statements critical of the current evaluation and accreditation system, such as the San Francisco Declaration on Research Assessment (DORA) and the Coalition for Advancing Research Assessment (CoARA), in order to make those changes effective, global collective action is required to move from a system based on individual merit to one more in line with the idea of social production of knowledge.

The scientific and university system produces a series of effects which significantly hinder the epistemological, institutional and political transformations that are necessary to make the University a space truly committed to the sustainability of life.

In this way, we can observe what we call the *hegemonising effect*, which can be seen in the reproduction of hegemonic visions and in the resistance to change.

Just as the system described and analysed here is the product of a crisis of knowledge, it also determines the continuous drift towards simplification of knowledge, its one-dimensionality, the absence of critique and

the predominance of positivism, which make knowledge much more suitable for commercial and productivist logics. Also prevalent is the *packaging effect*, visible to the extent that researchers make efforts to learn how to frame and package their work and ambitions in publishable articles that require ignoring the political dimension of knowledge. The *homogeniser* effect is at play too, which acts by standardising the professional profiles of the teaching and research staff and neglects the qualities of teaching by measuring merit only quantitatively while encouraging a productive and adaptive profile. Finally, there is the *centrifugal* effect, which is observed in the de facto expulsion of fields of knowledge and critical postulates via compartmentalisation and the absence of adequate mechanisms for mainstreaming.

The transformation of teaching: orientation on teaching about the sustainability of life

In order to use the challenges presented by the sustainability of life as a basis for rethinking university teaching, it is necessary to address basic questions about the object, purpose and form that education should take.

Our present context is one of multiple crises and in the face of the evolution of an epistemic failure that has determined disciplinary logics and one-dimensional approaches and diffuses the emergence of integrated, collective and multidimensional reality. It is worth highlighting then some fundamental threads that guide the changes to be addressed in university teaching.

In the first place, it is necessary to make an unequivocal commitment to education for transformation, despite the enormous difficulties that the fields of social and historical change encounter when constituting lines of research and teaching today. In contrast to the University that prioritises the values of adaptation to a reality presented as fixed, education must be described as a collective opening of new possibilities to change that reality. Critical and emancipatory perspectives offer as their objective the apprehension of reality so that reality may then be transformed and other possible futures be constructed, precisely what these times call for.

Secondly, this shift that we propose for teaching must address curricular content in order to cease learning things that work against our own survival and incorporate knowledge necessary to transform the model that threatens the sustainability of life. In this sense, it is necessary to incorporate and extend the contributions of critical theories and centre ecological sustainability, biocentrism, inter- and transdisciplinarity, interculturality, decoloniality and cosmopolitanism, among others.

Likewise, in the face of the simplification, one-dimensionality and Western bias that predominate today, there is a need for an openness and dialogue of knowledge and disciplines that address the complexity and interdependencies of reality.

Equally essential is a review of *hidden curricula*, those sets of uncritically assumed truths that compose an anti-ecological, heteropatriarchal and colonial panorama of development processes and that must be systematically deconstructed and questioned to make way for a curriculum that puts reflections on sustainability of life at its centre.

Thirdly, in concert with the assumption of the political character of epistemology, this paradigm shift calls for an end to the political deactivation that currently prevails in the consideration of teachers, who are thought of as

mere transmitters of an absolute truth and alien to subjectivities and contexts. Nothing is more irresponsible in the face of current challenges than to continue reproducing the falsehood of an academic neutrality that hides the biases that are always part of knowledge. Education, like knowledge, is fundamentally a praxis that cannot be properly characterised as transmission. Rather, it requires logics of dialogue and explanation of the situation, the situation's political dimension and their interdependencies, as the pedagogies of emancipation inspire us to do.

Fourthly, classrooms must see their dynamics transformed based on an unshakeable commitment to the democratisation of relationships and knowledge. All the people who make up a classroom must feel responsible for participating and making contributions to learning processes.

Let us abandon the conception of students as customers of a transmission system to create spaces in which their leading role is essential in the construction of learning communities. There are many pre-established hierarchies to break and inertia to replace to make room for the dynamism of classrooms with the purpose to build learning communities linked to society, particularly to the knowledge that emanates from social movements and actors.

Final Thoughts

With this work we have tried to open a wide-ranging reflection on responding to a need on the part of society as a whole in the face of a context of systemic crisis that incorporates ecological, socio-political and cognitive challenges that directly confront universities, researchers and teachers. The incorporation of the transformative spirit of the 2030 Agenda into the University requires actively facing a paradigm shift in the development model that has been hegemonic for many decades. It is a matter of opening epistemological, political and institutional space for the approach to the sustainability of life.

This prevents SDG 4.7 "education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and the appreciation of cultural diversity and the contribution of culture to sustainable development" from being thought of as a set of sectoral actions and, instead, understands the need to mainstream these aspects, overcome epistemic injustices and incorporate ecofeminist and decolonial knowledge and ways of knowing. The transition to transdisciplinarity is an obligation to understand the inter- and eco-dependence of reality.

We observe and analyse numerous difficulties for undertaking these transitions, such as the predominance of the logics of excellence and productivism, measured in individual and quantitative terms that pervade the market-based drift in university teaching and research.

The 2030 Agenda is an opportunity to overcome the compartmentalised and disciplinary logics of knowledge, while creating space for a cross-border, dialogic and collective construction of knowledge, allowing progress in research committed to a fairer and more sustainable world.

In this context, networking is especially relevant to generating knowledge and research with other agents and diverse spaces beyond strictly academic ones. Connections should be made with spaces that promote the praxis of co-production of knowledge to support the sustainability of life.

The University within the framework of the 2030 Agenda:

NOTES FOR INTEGRATING SUSTAINABILITY
OF LIFE IN UNIVERSITY TEACHING AND RESEARCH

1. Introduction

The 2030 Agenda is a sign of the times we live in, a time defined by a series of overlapping and interconnected crises that require a new intellectual and practical horizon to overcome them. The conceptions of progress, growth and development that have been dominant in recent decades are insufficient and inadequate as postures toward the future. That is why we find ourselves needing to call for a paradigm shift as the only possible response. The main challenge is to articulate theoretical and practical foundations to thinking about the world and achieving global coexistence based on a profound revision of the ontological and epistemological postulates on which current societies have been built.

The sustainability of lives, understood as a multidimensional process, poses a set of political, social and cognitive challenges of enormous proportions.

Academia, given the nature of the task, is directly challenged in its ability to comprehensively understand this great undertaking. This understanding in turn allows us to effectively guide praxis to construct responses.

In this sense, the role of higher university studies is crucial because of the contribution of learning processes and transforming models of development, production and creating

eco-social relationships in the future. The 2030 Agenda is a much greater challenge for universities than identifying actions to promote sustainability or being able to describe certain subjects or disciplines as "sustainable". Thus, the 2030 Agenda constitutes an explicit call to achieve universal and just solutions which offer comprehensive visions of development processes redefined in a multidimensional logic. That logic would address the evident interdependencies between territories and transnational dynamics. Universality, integrality and multidimensionality form a fundamental critical horizon for all disciplines of knowledge insofar as they grapple with normative, epistemological and practical issues that are fundamental to offering frameworks for understanding and adequate responses[1].

It is therefore necessary to carry out a systematic identification of what this set of paradigmatic challenges entails for university research and teaching. The call for a Multidimensional View has an evident academic correlation in the demand for multidisciplinarity that, not without difficulty, tries to make its way into a rigid university tradition based on defining objects and methodologies of knowledge that are strongly linked to each discipline. Thus, to speak of multidimensional development processes – environmental, economic, social, political and cultural – as has been the practice at some academic and political institutions in recent years – in reality points us to the need to build new paradigms that investigate the interdependencies of academic disciplines that have emerged and evolved autonomously and with little interdisciplinary dialogue.

Following the principles set down by the 2030 Agenda means reconfiguring the objects of study of scientific thought with a logic of sustainability as the starting point. That is, begin by incorporating the principles of universality, integrality and multidimensionality of the dynamics that have historically oriented the social and political currents that in recent decades have been called "development processes".

Moreover, this must be considered in light of the relations of eco-dependence in a world in which humanity has lived in such a way that it has breached the safe and just limits of the Earth system (Richardson et al., 2023).

The main purpose of this research work is to contribute to opening and widening the realm of possibility in the university environment, particularly in relation to its research and teaching activity. This is intended to to contribute to adapting the university to the challenges demanded by a context of systemic crises, which calls for appropriate knowledge about them and possible ways of approaching them. Doing so principally requires reflection on the epistemological foundations that have led us here and about the possibilities that knowledge offers us to build answers that will deliver us to safety[2].

To address this question, in this paper, we start by identifying an essential "epistemic failure" committed by scientific and disciplinary production, as well as how it has evolved in

university institutionality. This epistemic failure has its correlate in the structural dimension that defines the how and why of university research and teaching.

Indeed, substantially incorporating approaches and content related to the sustainability of life[3] in all university areas requires an epistemological shift that allows for the deployment of knowledge that fits current challenges, namely the breach of planetary boundaries and their relationship with the multiple crises that leave us inhabiting uncertain times.

Several conceptualisations and approaches, which we briefly discuss below, constitute a key to rethinking knowledge. These elements emerged within various disciplines – but also from non-academic or "non-disciplinary" knowledge – and, therefore, have different starting points and purposes generally linked to improving the scope of these disciplines. Together, they constitute a framework of approaches, perspectives and inquiries whose interdisciplinary dialogue poses a challenge for the paradigmatic change called for in this new time.

Firstly, we mention political epistemology, based on an appeal to the consideration of the political and situated character of knowledge, and its relationship to democracy as an epistemic community and the mechanisms of production and distribution of science (Broncano, 2020).
We also point out the importance of theories critical to

the historical understanding of scientific thought and its relationship with racial, patriarchal, and colonial power structures (Blazquez Graf et al., 2010; Guba & Lincoln, 2002; Harding, 2012; Valdez, 2010).

Next, we highlight the role of ecology and sustainability as fields of great relevance to providing evidence about the alteration of ecosystems and the breach of planetary boundaries and their relationship with the capitalist model of reproduction (Rockström et al., 2009). These fields have seen the deployment of one of the great contemplative undertakings of our time, as it seeks to take charge of the design and governance of societies in the Anthropocene. The task is to rethink multidimensional processes within the "just and safe limits of the Earth system" (Richardson et al., 2023).

A fourth element highlights the need to overcome unidisciplinarity in order to explore encounters between disciplines based on multidisciplinarity, interdisciplinarity and transdisciplinarity, as well as the commitment to cross-border knowledge. In this sense, there is a timid emergence of the paradigm of complex thinking (Castro Gómez, 2007), which has, in turn, two main consequences: flexibility in the lines of separation between different disciplines (that is, the incorporation of transdisciplinary logics, because complexity cannot be addressed from a single dimension of knowledge) and the transculturation of knowledge.

Fifth, we point out the need to incorporate a biocentric view of societies currently at serious risk of being able to reproduce life (Naredo, 2022). If we take as a given the existence of eco-dependence as a fundamental principle of life, anthropocentric perspectives based on the radical distinction between culture and nature that have dominated Western scientific thought prove incapable of apprehending the complexity of the eco-social challenges facing the sustainability of life. They are even less up to the task of thinking about the transformations necessary to meet these challenges.

And finally, we appeal to the universalism of political cosmopolitanism as, paradoxically, the main "realist" proposal in a context of transnationalisation and inter- and eco-dependence. These dynamics transcend the administrative and state borders that politically divide the world, while incorporating cosmopolitan and global perspectives (Beck, Lash, & Giddens, 1997; Beck, 2002; Held, 1997; Held et al., 1999; Held and Hervey 2009).

By this we mean more than the knowledge originating from one discipline being connected with the knowledge that comes from another so that new fields of knowledge are generated in the University. It is also a matter of different cultural forms of knowledge coexisting in the same university space and beyond it from a transdisciplinary or cross-border encounter. It is an integrative thought in which Western science can be "linked" with other forms of knowledge production, in the hope that science and education will cease to be

handmaids of post-Fordist capitalism. In short, it is a matter of facilitating the transition from the Enlightenment paradigm to a new eco-integrative paradigm (Naredo, 2022).

Indeed, if we start from the assumption that in recent decades reality and social, political, economic and environmental processes have become more complex, interdependent, multidimensional and transnational, we must agree on the need to redefine the epistemological, theoretical, and methodological principles that we use to study reality with the aim of better investigating, explaining and teaching the world we inhabit.

There are two parts to the basis for transforming university teaching and research to incorporate the principles of the Agenda 2030. On the one hand, there is consideration of the political and situated nature of knowledge, the incorporation of critical theories and issues of ecology and sustainability into curricula, overcoming unidisciplinarity, and taking a biocentric view of societies. The other side is to consider realities and dynamics that transcend the administrative and political division of the world and its state borders while integrating cosmopolitan and global perspectives. And this cannot be done without a profound review and redefinition of the structural and institutional elements that set the boundaries of the Spanish scientific and university system, part of which are analysed in the third section.

In order to address the approaches outlined in this introduction, a qualitative methodological work has been conducted, with an emphasis on documentary analysis, bibliographic review, and the participation of key actors (teachers and students) for the collection and contrast of relevant information. This participation has taken the shape of various discussion and contrast groups. In the case of teachers, a discussion and contrast group was formed while ensuring a mix of gender equality, teaching experience critical perspective, experience in cross-cutting work and multidisciplinary balance. This group was consulted at two key moments of the research process: at the beginning of the process, with the aim of contrasting the approach and structure of the research and gathering relevant information, and at the end of the project, with the aim of collecting their assessment of the main results. As regards students, the process was executed in two phases of consultation with different groups, at the beginning and end of the research work. For more information on the process, see the methodological annex.

The research process has yielded this report as its final product. It is structured in three parts. The first part focuses on the level of knowledge. It addresses the main epistemological and theoretical challenges involved in incorporating the sustainability of life into the study of reality in order to deploy knowledge to answer current challenges, which are characterised by the overflow of planetary cycles and their interaction with the multiple crises we face. The second part of the report deals with the structural dimension and includes an analysis of the different elements of the scientific and

university system that have significantly determined the cognitive drift that characterises the University and limit the role that the sustainability of life occupies in the knowledge created, transmitted and transferred in and by universities. Next, the third part of the research carries out a preliminary exploration of the main implications that the current systemic crisis and a transformative reading of the 2030 Agenda have for university teaching.

The report concludes with a section of final reflections in which the three levels analysed are related and linked to the context of opportunity opened by an agenda that is still being interpreted and implemented by universities.

2. The dimension of knowledge in the face of global challenges

2.1. Why start with an epistemological reflection?

It is necessary to justify that overlapping and interconnected crises (multiple crises or polycrises) are not simply crises happening at the same time or only the result of failures to adapt in the mode of reproduction of the multidimensional dynamics that give rise to what have traditionally been called "development processes". They are also linked to resistance to accepting the inadequacy and limitations of the predominant paradigm with which we understand and explain reality. In other words, when many of the problems that plague human societies are pointed out – famines, violence, inequality, overuse, etc. – they are usually explained by political or economic shortcomings or failures, but it is not usually considered that the very knowledge from which diagnoses and proposals are drawn is also lacking. In other words, we err epistemically in the way in which we construct the frameworks of interpreting reality.

There are views that deny this failure, to the extent that they defend that we have all the necessary answers to address global challenges. Such conceptions consider that the paradigm of development focused on the generation of wealth measured in monetary terms is still a valid way of explaining reality. It is therefore necessary to justify that we are facing a crisis of paradigm, a term that points us to the dimension of our reflection on knowledge, which academically has been called epistemology.

The predominance of certain scientific paradigms is not only due to their explanatory capacity or the absence of evidence to refute them, but also by a certain confluence of forces to whose interests in this paradigm are functional. In other words, the political dimension also intervenes in the use or disuse of a paradigm. Indeed, we live in a time characterised by the rejection of what are not partial stories, a time which is committed to a culture of radical perspectivism or understanding that knowledge itself is something belonging to the private sphere. A time in which neoliberalism has contributed to turning knowledge into just another commodity. Thus, the political relevance of epistemology has tended to be set aside (Broncano, 2020) because it is considered a language typical of academics.

However, to fully understand what is happening in overlapping and complex crises, we must reflect on the postulates that tell us what we can know and how knowledge is produced.

We must also reflect on who knows and who does not know, and on what limitations we take on with the heretofore reigning paradigm. It is essential, therefore, to return to epistemological reflection.

All epistemology is political, insofar as it asks what knowledge is, who knows and is known, and who ignores and is ignored. This is perhaps even more apparent in a moment

such as the current one, in which the process of commodification of knowledge have given rise to phenomena that show its undeniable political nature: the oligopolies of the media and of journals and publishers —even in science; the explicit cataloguing of some information as secret – think of Edward Snowden or Julian Assange – or the subordination of a great deal of other knowledge because it is of little use to commercial interests; the growing exploitation of personal and collective cognitive resources — as the strength of bodies was previously exploited — in a kind of cognitive capitalism. It must be considered, as Broncano (2020) emphasises, that we are witnessing

> ... a paradoxical systemic production of ignorance without which the reproduction of inequalities and social injustices would not be possible, an ignorance that progressively extends its veil over those things that we would be most interested in knowing in order to transform society, such as the scope and location of all the dark money that finances the most terrible things of the world and protects individuals and corporations from public oversight and control; the threats and growing contempt for democracy, which is falsely accused of being technically and cognitively inefficient, and the mendacious promises that authoritarian societies regulated by minorities of experts and leaders would be better alternatives; the peremptory demands of

> climate change and the sustainability of human life on earth, which can no longer wait for a change of civilisation, as asked for by voices that are as faithful as they are idealistic. These demands call for a reordering of all our knowledge in service of an ecological transition... (p. 9)

To *reorder our knowledge,* we cannot overlook reflection on the epistemological, since we would aid in stripping ourselves of one of the fundamental vital functions.

Knowledge is not the intellectual and individual matter that we take for granted that exists equally within the heads of all human beings. On the contrary, we would do well to understand that it is an element that is part of the "dynamic structure of reality" (Zubiri, 1984). Similar, for example, to understanding that health depends partly on some bodily dispositions and, in another important part, on personal lifestyles and access to social health systems. Or similar to when we believe, beyond all doubt, that personal life progressions are the product of genetic, cultural, historical, personal and social dynamics.

In the same way, knowledge is not something abstract, permanent and indeterminate due to social, political and cultural dynamics, but quite the opposite. It is most proper to bear in mind that ignoring the epistemological -- as we did for being postmodernist and neoliberal – in its philosophical and socioeconomic meaning – is in itself an instance of political epistemology, insofar as it implies the renunciation of considering knowledge as a crucial factor

for social and political transformations. Crucial not only in what it can bring us, but also crucial as an expression of a certain imbalance of power. When we commit to knowledge only being generated in spaces and through procedures that only an elite has access to, we are actually committing more to *epistocracies* than to democracies. Knowledge that is not considered thus remains on the margins, invisible and branded as useless for the transformation of societies.

At the origin of reflection on knowledge is the idea of the subject. Who is the knowing subject and what are its characteristics? Rationality, we would be told as the start to modernity. To whom have we attributed that rationality? To the individual or, to be more precise, to the idea of the individual. Individualism is also a political position rather than a knowable fact, since the social and political conditions that make an individual a citizen and a person are ignored, thus depriving the individual of fundamental capacities to take charge of one's own reality. It is, in short, once again, about forgetting —or concealing— the collective, social and political dimension of the structure of reality, whether to conceive of the human being as an individual, knowledge as neutral and objective, health as merit or any other issue, without taking into account how the dynamism of the real is constituted. It is no surprise that this forgetting has served as a preamble and condition for the appearance of post-truth today.

Epistemology does not refer only to theory, just as reality is not limited to practice. Theory is also part of reality, in the same way that knowledge is fundamentally a praxis. When sociology convincingly introduced

a new paradigm based on the "social construction of reality" (Berger and Luckman, 1968) and, therefore, on the social construction of knowledge, perhaps we forget the "cognitive construction of society" and casting aside the centrality of knowledge in the construction of society.

This is a two-way interaction, a mutual mediation (Broncano, 2020) since, if it is evident today that knowledge is socially constructed, society is also epistemically constructed, although this is given less thought.

It is important to consider both directions of this mutual mediation, since we usually emphasise the power relations that constitute the social element when explaining reality, without taking into account that this social dimension and the power relations that constitute it have an epistemological correlate.

That correlate is not a mere consequence of these relationships but the result of the fact that knowledge is one more force that acts in this social construction -- that is, it contributes to the epistemic construction of society.

For these reasons, this epistemological dimension within the framework of this research should be addressed. The knowledge and epistemic positions of people and groups must be part of our analysis of the dynamic structure of social reality, in the same way that economic, social and political power relations are usually the most common dimensions in analyses.

2.2. Political and urgent epistemologies of interdependencies

Today we can more clearly see the interdependencies and, in these, the radical ecodependence of all human processes and practices. Without straying into a discussion of how recent and apparent these interdependencies are, we have in mind a discussion of something more radical: the social and political constitution of human reality. The neoliberal abstraction of the individual cannot advance in its explanatory potential beyond being an unlikely hypothesis because it cannot be verified. On the contrary, human beings are characterised by a complex set of interdependencies that cross all times of existence and all stages of life. No one is born except by a woman, no one invents alone everything that makes up their knowledge, no person can survive if they are not cared for.

Knowledge is no less than life itself, a product of multiple interdependencies, since all knowledge is acquired from other people and is built in permanent interaction with sources other than oneself.

This is not at all incompatible with the Kantian idea of epistemic autonomy and emancipation, an idea that has shaped and determined much of the modern history of the world, nor is it incompatible with the recognition that there is also a personal dimension that, intersected by social, cultural and political dynamics, contributes to the ordering of reality.

For all these reasons, addressing the challenges that the 2030 Agenda poses for university research and teaching requires epistemological reflection at a fundamental level in order to explore which epistemological failures explain a world that endangers the sustainability of life, as well as their main human aspirations for justice and emancipation.

Philosophical thought has already been amazed at the particular historical moment of the second half of the last century, when it was thought that, for the first time in history, humanity was facing the certain possibility of ending history (Ellacuría, 1990). So the reflexions arose from the recognition of the possibility of nuclear disaster. For the first time, human knowledge had to take charge of its own potential to wipe out the species, which , it could be argued, characterises our time as a posthumous condition (Garcés, 2017). By this Garcés refers to the time of the liveable, to the collapse of an imagination incapable of thinking about the future blackmailed by an imminent threat. This places us in a time of urgency, or rather "a time against time". This is something distinct from the collapse "in time", which means the historical product of relations between humans and ecosystems that has become frought with conflict and threats (Garcés, 2023).

When we call for reflection on the sustainability of life in universities, we are requesting that one of the

institutions that create and reproduce knowledge do so while keeping in mind that, unlike the still present nuclear threat, inaction is no guarantee of sustaining life. This is why it is so important to attempt to overcome the collapse of imagination and knowledge, and to beat back the threat of socio-historical or eco-social collapse.

In short, we are facing problems that test the limits of our knowledge. In addition, the gravity of the problems tells us that time is working against us. The processes with which ecosystems support and enable the sustainability and reproduction of life are beginning to react to the breach of various planetary boundaries (Röckstrom et al, 2009; Steffen et al, 2018; Richardson et al., 2023). We also know that human action is primarily responsible for disaster, which is both a reason to inquire into responsibility and a condition that offers hope.

As we said in the introduction, the main purpose of this work is to open and widen the field of what is possible to hope for in the university environment, particularly in those areas related to research and teaching activity.

It is essential to reflect on knowledge, on the basic epistemological questions that have brought us here and on the possibilities that knowledge offers us to build answers that keep us all safe.

We can only undertake this project by understanding the political character of epistemology. Ways of knowing are a fundamental and irreplaceable dimension in the current dynamic structure of reality, and so understanding the study of knowledge in this way will allow us to recognise epistemic injustices as crucial elements and thus reveal their influence on social construction.

It also contributes to solving epistemological questions in different societies based on their own perspectives. This would be an epistemological recomposition that allows for and contributes to the transformation of power relations, which would reveal actions and actors responsible for various problems in society. This would likewise be a recomposition that proposes paths of dialogue between multiple perspectives, visions and angles of knowledge. In the process, it would effectively provide education in tolerance, respect for rights, recognition of our biological and eco-dependent condition and in critical approaches to reality.

Much of the explanation behind the failures we see when in this environmentally overexploited world governed by dynamics of structural inequality are epistemological failures.

That is, there are critical explanatory limits to the bases of knowledge on which development models and their social and political expressions rest and, consequently, they cannot adequately reorient for our current multidimensional crises .

With that, we highlight a main conclusion: an epistemic failure has occurred. Because these social and political expressions are already embedded in the ways of producing knowledge, they are inscribed in the same knowledge that also has social and political dimensions. This issue is no small concern when addressing the challenges faced by the University, the main epistemic institution of our time. In this sense, it is necessary to establish the contours of the epistemic failure that has brought us here and how it has occurred, even if we do so only briefly and with the aim of making basic reflections on what we know and what we can know.

2.2.1. The origin and epistemological nature of the epistemic failure

The history of epistemology has been determined by the expression of various dualisms on which knowledge has been built. Along with the separation of reason and senses – and their correlates in terms of body and soul, form and substance, content and container – the rationalist revolution configured a sort of anthropocentrism based on a dual conception of nature and history (or society). The ontological separation between the human being and nature continued in this vein, breaking with an organic vision of the world and building the edifice of knowledge and science based on the hypothesis that nature could be subordinated by human knowledge. The fundamental hypothesis on which this division was erected was the autonomy of the knowing subject that had been established by Kantian philosophy. This in turn gave way to the Enlightenment revolution and the predominance of rationalism on which the sciences were founded.

These are the foundations upon which the current state of affairs rests, without which the predominance of the mathematisation of the world and the vision of it in mechanistic and linear terms cannot be explained. Nor can the hegemony of economic thought in the social sciences be explained, with the attendant focus on the commercial and monetary dimensions, in addition to its servile and subordinate nature. That rationalism is also the basis for political thought that rests on the metaphors of the social contract and the general will.

In fact, the main premises of the Enlightenment paradigm created the fundamental basis of anthropocentrism that continues to be hegemonic. Descartes' renewal of dualism gives rise to an endless number of sectoral approaches that share an analytical framework that compartmentalises reality, and are foundational for a multitude of disciplines that advance by generating knowledge about tracts of reality and reproducing the dream of the autonomy of the subject in the autonomy of the disciplines.

The linear vision of history is the source of the same idea of progress based on faith in human reason and scientific knowledge, the highest expression thereof. A century and a half later, this evolution crystallises in the idea of development and its foundation in the production of goods, measured in monetary terms. Development is based on the principle that demands this linear vision of history with the need for unlimited and permanent growth quantified as income.

In recent decades, several disciplines have sought to draw attention to the shortcomings of the prevailing paradigm in understanding and interpreting the world. Particularly, they have focused on the knowledge that deals with the limits of the planet. A seminal moment was the publication of the classic text by Meadows et al. (1972) and its subsequent editions, which proposed various scenarios using projections based on the exponential increase in the consumption of materials and the consequences thereof. Of note in our century is that an interdisciplinary consortium made up of geologists, biologists, chemists and other scientific knowledge sponsored by the Stockholm Resilience Centre has established a framework of analysis focusing on planetary boundaries delimited by nine planetary cycles fundamental to the sustainability of life (Rockström, 2009). From this new framework of analysis that considers planetary reality in a systemic way, theories that explain social and economic processes face the challenge of integrating the necessary material and energetic bases for such processes. We are at a moment defined by the epistemological challenge of integrating an (eco)systemic vision of the world into theories based on the analytical fragmentation of the world.

The challenge is not just to add dimensions that were previously discarded as explanatory sources or considered externalities in the theoretical construction. Rather, it is a new epistemological framework that understands and integrates the multidimensional and dynamic character of reality.

The traditional focus on the object of knowledge now requires focusing on the interdependencies and interactions that give form to the object, rather than in the essences and definition of said object. An epistemological reflection on interdependencies is necessary, that is, a reflection that includes the subordinate parts of the act of knowing itself.

Here it is essential to mention the emergence of Ecological Economics as a school of thought that dissents from traditional economic science and has enormous theoretical potential, although institutional uptake has been limited. It does not so much address a discipline or a part of the economy, as it does the generation of an interdisciplinary space of thought focused on the interactions between economic activity and the material bases of the planet. The work of Georgescu-Roegen (1971) constitutes an epistemological revolution precisely because of its incorporation of biological, physical and chemical magnitudes into the analysis of economic activity, based on the analysis of the transformation of low entropy (natural resources) into high entropy (waste). The advances produced by thermodynamics are therefore essential for the knowledge of (ecological) economics. A detailed analysis of this contribution is beyond the scope of this work, but thermodynamics are crucial to understand the scope and depth of the epistemological failure that still persists in so much of still-hegemonic classical economic thought, while relegating this type of integrative thinking to spaces with little influence. However, recent years have seen an unprecedented emergence of

debates more open to these postulates, probably as a product of the systemic and multiple crisis we are witnessing. In Spain, it is worth mentioning the works of Martínez Alier, Naredo, Fernández Durán, Herrero, Carpintero, Riechmann, Bermejo and González-Reyes, among others, who substantiate this eco-integrative thinking.

2.2.2. Preeminence of a certain economics as a product and evolution of epistemic failure

Among the numerous dependencies of the act of knowing, it is worth emphasising the relationship between the generation of knowledge and its institutionality, as they form an important link with the object of this work. This is a key issue for emphasising reflection on the current epistemological difficulties in knowing, understanding and fully explaining the problems we face.

Although we provide a detailed discussion on this issue in the next chapter, it should be noted here, given its epistemological consequences, that the evolution of the social sciences in recent decades has produced a significant change in defining the quality of knowledge generated by these fields.

As Loorbach and Wittmayer (2023:4)[4] make plain, "while many social science scientists in the 1960s and 1970s were committed, idealistic and sometimes activists, over time they retreated into their disciplines and began to define quality academic in terms similar to those of the natural sciences: objective, descriptive and empirical. Researchers should not commit themselves to their object of research but observe,

analyse and formulate knowledge so that others can or cannot use it as they please." This evolution has established the current predominance of so-called *problem-solving theories* (Cox, 2013), whose main consequence is to prevent the generation of knowledge aimed at changing the particular and historical power relations that shape reality in a given era.

In the second half of the twentieth century and up to the present day, scientific knowledge, and in particular knowledge generated by the social sciences, has evolved at the same time as countries with more international power deployed the welfare state, bureaucracy and their economic models. The University developed knowledge, concepts, and findings by establishing recommendations that advanced these models (Loorbach & Wittmayer, 2023), thus establishing a model of linear transfer between the generation of knowledge and its application that was based on a strict separation between pure knowledge and applied knowledge.

We are not revealing anything new when we say that the predominance of a certain school of thought in the field of social and economic sciences has been at the origin of the current situation of planetary overflow, with the consequent threats and uncertainties.

We are referring to neoclassical economics which, with its fundamental postulates on the elements that explain the development of societies, has constituted a framework of knowledge that is extended and assumed *ad nauseam*. More specifically, we mean the daily sacrifice of any other dimension

of reality in the surrounding world, even upon reaching the abyss of the possible destruction of the material bases that make life sustainable.

So rooted is this state of affairs that the fundamental postulates of the neoclassical school of economic science have used a merely instrumental logic to situate the notion of economic growth as the primordial offer of progress and abundance, "closing our eyes to the social and ecological damage they cause or helping to absorb them as something normal or inevitable" (Naredo, 2022, p. 245).

This fact is the best example of how our definitions of the possibilities of progress of our societies are based on an alarmingly reductionist knowledge of reality. The predominance of this type of knowledge is, in itself, an epistemological and political problem. Adopting the main statements and postulates of the standard form of economic science precludes the possibility of redefining the objectives and goals of society as long as they do not entail economic growth as the primary objective and, consequently, seriously limits the possibilities of transforming societies. The current undeniable subordination of politics to postulates based on economic growth conveys the idea and the feeling of — that is, constructs as reality — that it is not possible to think politically outside the territory delineated by indicators such as Gross National Income (GNI).

This predominance of knowledge constructed according to a specific current in economic science can be explained in multiple ways, but all of them reflect

the epistemological character of this predominance. In this sense, Naredo (2022) draws attention to a sequencing of assumptions that have historically shaped the current conceptions of the economic and political system underpinned by the metaphors of production and the social contract. It is necessary and pertinent to carry out a critical review of these metaphors and their pseudoscientific value, as Naredo (2022) exhaustively does, in order to demystify their ability to synthesise the set of processes that give rise to what we understand as societal progress.

A central idea that explains this whole process of neoclassical economic thought becoming dominant is that of the progressive commodification of all social processes in the broadest sense of the idea. As we shall see later, this has important consequences for the university institutionalisation of knowledge.

Not surprisingly, this process of commodification is the key figure in the latest commitments of a capitalist system that continues to commoditise vital processes. The process of demystifying some concepts and metaphors, as Naredo suggests and as we consider necessary to address, cannot be completed without reflecting on defining the epistemological conditions that make it possible, and in part also explain, that such a mistake has occurred.

Moreover, the predominance of economic science over other knowledge truly means the predominance of a school

of concrete thought, of an approach developed by the so-called neoclassical school and its evolution in the form of monetary theory. This approach, from an epistemological point of view, also refers to a movement that has separated spheres of reality in order to achieve a simplification with a theoretical aspect. Once again, disciplinary knowledge divides reality into parcels to promote a simplified idea with a greater capacity for absorption by educational, political and media institutions. The construction of economic science during the twentieth century is an exciting episode in the history of knowledge and its interactions with the political and institutional environment (Tribe, 2022) in which the relations between knowledge and institutions have had more significance than merely epistemological issues -- that is, the capacity of theories to explain reality.

The political and institutional context is crucial to understand disciplinary and scientific drift, but it is necessary to integrate both aspects into epistemological reflection. In other words, epistemology has a political dimension if we assume that isolated reflections of the experience of the world are precisely an error stemming from an acceptance of Cartesian duality that allows for, in short, thinking about the autonomy of the rational subject with regard to experience. This fact confers on reason the power to separate and abstract itself from reality. The most honest theoretical constructions recognise which hypotheses have to be confirmed, or argue and explain the reasons why certain variables or dimensions are set aside. But as time passes, we forget what had not been contemplated, and we also forget its contingency, which means it ceases to be

part of the constructed reality. This has been the case with material ecological bases and patriarchy, for example, which have been two crucial structural elements for economic growth and progress. However, their variables — planetary boundaries, domestic and care work, community work, social ties, etc. — are not part of the fields contemplated in the theory.

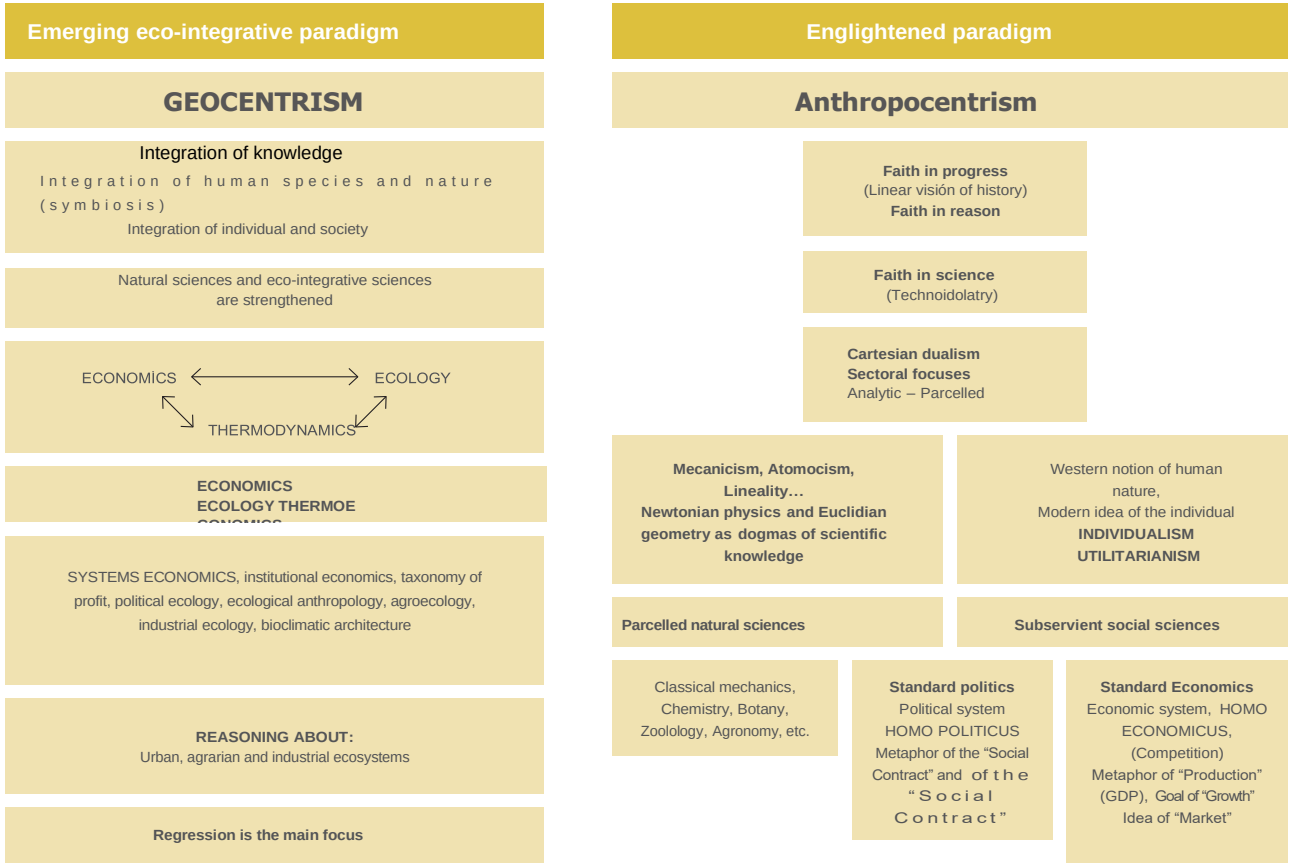
In the words of Naredo (2022), we have spent decades describing the characteristics of the Enlightenment paradigm and its limitations in understanding, explaining and transforming reality. Figure 1, which summarises the transition between paradigms, helps to visualise some elements of what could constitute a new paradigm integrating the radical ecodependence of the multidimensional processes that shape reality. It is a schematic that can serve as a guide for critical reflection and the necessary imagination.

The pre-eminence of the neoclassical school of economic thought is, in short, not only a problem of relations of power and privilege in the institutional and political spheres, but also a problem of power relations and privilege in the institutional and political spheres. We can better understand this problem if we assume that our knowledge can only be thought of with the idea of political epistemology as a starting point. Let us consider it one step at a time. In the first place, we shall elaborate on the epistemological nature of the epistemological failure, and then point out emergent critical theories that offer escape routes from hegemonic thought. Then we shall reflect on the concept of epistemic injustice and its relevance for the construction of critical knowledge that is situated and appropriate to current challenges.

FIGURE 1

ENLIGHTENED PARADIGM VERSUS ECO-INTEGRATIVE PARADIGM WHERE ARE WE?

SOURCE: ADAPTED FROM NAREDO (2022), PP. 254-5.



2.3. Critical epistemologies for integrating Dimensions of reality

It is common to believe that the dispute over development models is just a disagreement over ideology or political principles. It is true that ideas have a highly important influence on the deployment of social and economic models and their subsequent evolution, but if we do not keep in mind the epistemological dimension we may be reducing reality, merely demanding transformation when what is required is to unlearn and critically reflect in order to better understand reality.

The need for knowledge aimed at changing the foundations and pillars of the current development model requires moving far beyond the theoretical approaches that do not question the historical structures propped up by the forces and dynamics of our time.

This specifically refers to the approaches that do not problematise the frameworks aimed at "solving problems", because such approaches do not question the limits of what we can know. Instead, we must advocate for "critical theories" (Cox, 2013). There is a presupposition underlying this divide: the idea that all theories have a purpose and pursue certain interests that can be expressed in political terms.

In short, we must extract and demonstrate the political nature of knowledge, ponder this dimension and therefore clarify its relationship with democracy.

This requires inquiring into the epistemic value of democracy (Broncano, 2020) -- that is, we must critically rethink the subordination of democracy to the efficacy of hegemonic scientific knowledge at each historical moment in order to meet these challenges. Perhaps we are constructing *epistocracies,* and thus leaving in the hands of peoples, the supposed sovereigns, only arguments for disaffection and contesting political systems that are accountable to schools and thoughts from and for the constituted powers.

It is unlikely that the University will be able to contribute effectively to the generation of knowledge suitable to the reality we face without rethinking the epistemological foundations of its political nature.

This is not a novel or extemporaneous idea. In fact, for some decades now, an epistemological revolution has begun to emerge, albeit timidly, that is capable of laying the foundations for thought that is simultaneously complex and integrative.

The apparent interdependencies in reality present a growing challenge to a knowledge that has pursued the incommensurability of each discipline of the wide and leafy tree of sciences. All disciplines pursue their explanatory autonomy and, at the same time, they all depend, to a greater or lesser extent, on the original dualisms arising from estrangement from the mystery of knowledge. We have already discussed the interdisciplinary nature of studies on planetary boundaries

which constitutes the main challenge for thought in our time. Rethinking the foundations of the current approaches to reality would be a vain exercise without conducting an in-depth reflection of its epistemic failures, of the limits that tradition and disciplinary evolution have erected regarding what is possible to know and what is not.

It is undeniable that something like this has happened in recent decades, starting with the emergence of critical studies and theories, particularly in the social sciences. This came after the epistemological turn motivated by constructivist and structuralist reflections. There are already numerous schools and approaches resisting while creating counter-hegemonic knowledge. That is, they address new epistemological perspectives that refute the materialist, rationalist and individualist ontology resulting from the epistemic failure we bear. These approaches include the gender approach and feminist studies on intersectionality, the approach to environmental sustainability of economic processes that we have already mentioned, some structuralist and post-structuralist paradigms and the proposal to decolonise studies to put an end to the colonial library. Taken together, these critical epistemological revisions offer escapes from hegemonic thought and testify to their resistance to being silenced and made invisible.

In short, we must recognise that feminism, postcolonialism, political ecology, and ecological economics, among others, constitute openings that can let us escape and overcome the rationalist epistemic failure that, founded on the separation of reason and the world, has led us to assume a one-dimensional and rationalist ontology that is perfectly objectifiable by an abstract and idealised reason.

And thus, reason depoliticised presents itself while ignoring its political nature that marks it as White, Western, elitist and a product of the Global North.

To counter the problem of silencing and invisibility, there are perspectives that have generated critical knowledge from feminist principles that are characterised by revealing dimensions not considered in hegemonic epistemological frameworks. They shed light on categories that have been invisible until today in the scientific field and that explain fundamental processes such as care, reproductive work, the value of unpaid labour and processes of empowerment of capabilities. They also use intersectionality to affirm their multidimensional nature that is intertwined with the parameters of existence. An intersectional approach provides us with new perspectives on the economy, politics, society and the world. In the same way, the decolonial critique of knowledge invites us to reconsider the power relations immersed in the processes of epistemological construction

and in the drifts of knowledge as it claims universality. That is also why we are witnessing an emergence of bioeconomic thought that, arising from different disciplines, seeks to offer us bases and categories to rethink our ways of relating to each other and of constructing reality and the world.

Indeed, for some years now, critical efforts have been emerging in some research centres that are committed to the co-creation of knowledge that brings together people from academia with people who conduct research outside of the academy. Thus, they try to integrate different types of knowledge, with the explicit intention to establish the foundations for democratic and emancipatory social change that justly and sustainably integrates environmental questions, while looking beyond the traditional research focused on analytically describing reality. Research collectives at the University of Rotterdam call these efforts "transformative research" (Loorbach and Wittmayer 2023), differentiating it from traditional research due to its commitment to exploring different narratives and perspectives that provide a kind of pluralistic, integrative and comprehensive knowledge of the impacts that theoretical models and proposals have on people's lives.

It is, therefore, a matter of advancing both in multidisciplinary and interdisciplinary practices, as well as towards a transdisciplinary knowledge that assumes the need to reconstruct and redefine the epistemological foundations of new forms of knowledge. Such forms must also focus on the relationship between academia and other types of knowledge, recognising its transformative potential to take on critical transitions.

In the same way as with feminist and decolonial criticism, the transdisciplinary challenge does not meet only with appeals for dialogue between people in academia and other types of research and knowledge. Understanding and taking into account the substance of these critical readings is not achieved with a mere recognition of the dimensions which seed them while failing to undertake the radical critique that they incorporate into the traditional epistemological foundations of science. These proposals, although they can be more or less incorporated into new discourses and narratives, will not be understood in their radicalism without taking into account that they come from subordinate, rejected or simply invisible epistemologies.

We are witnessing a long and profound history of epistemic injustice, which is only understandable if we recognise the political character of epistemology, of any epistemology.

In the same way, critical theories are fundamentally different because they recognise the situated character and political purpose that inhere in them.

2.3.1. Epistemic injustice and dependence for transformative knowledge

The term "epistemic injustice" was coined by the philosopher Miranda Fricker (2007) and represents the debut of feminist approaches in the reflection on political epistemology. The term, according to Fricker (2017, 2), "allows us to delimit a distinctive class of wrongs, namely, those in which someone is ingenuously downgraded and/or disadvantaged because of their status as an epistemic subject". This has two fundamental consequences: insofar as it is a direct form of discrimination, since prejudice operates against the person whose knowledge it judges inferior; and to the degree the negative effects of this way of perceiving that knowledge extend to other non-epistemic dimensions, which implies further discrimination.

For Fricker, what is important, and what differentiates epistemic injustice from other injustices within interpersonal relationships, is the lack of intention. That is, its foundation in prejudices that do not come from deliberations or any other type of rational judgment about the credibility of a subject. This is a kind of error of ingenuous epistemic judgment that produces testimonial injustice. Why does what certain individuals say have less credibility or testimonial value to influence knowledge of those who hear it? Let us think, for example, of how many times the demands and denunciations of indigenous populations in defence of their lands or traditional livelihoods are ignored in the face of the aggressions of multinational companies and their macro-projects supported by the political and institutional establishment. The point is not that we cannot recognise the basis of the conflict between these two

visions, but we will often, for example, call for environmental assessments carried out by independent groups with internationally recognised standards. Based on what judgments do we give greater credibility to these reports and, therefore, to the testimonies of the subjects who prepare them?

The category of epistemic injustice is useful as long as it is limited and specific, without using it to identify the generality of unjust interpersonal manipulations that we observe in interpersonal relationships and deserve their own classifications. In doing so, we remain aware of the different ethical and political dimensions of our epistemic lives through interpersonal relationships too (Fricker, 2017).

Epistemic injustice allows us to better understand testimonial discrimination as a principle of epistemological truth. It is not only illustrative in the field of interpersonal relationships and their numerous expressions of discrimination, but also as a structural injustice anchored in the same prejudices that justify unintentional discriminatory action.

The injustices that most often manifest are the product of racist, sexist and classist schemes and visions. Often, these prejudices crystallise in the establishment of norms, uses and habits in the spaces of knowledge generation, concretising and consolidating epistemic injustice. Medina (2020) has developed the concept of "listening structure" to uncover devices and mechanisms that objectify the principle of epistemic injustice by trying to hide it in normativities of presence -- that is, the establishment of principles

and habits that contribute to the normalisation of injustice.

Research activity must explicitly and actively confront this normalisation of epistemic injustice so that the unequal power relations that currently privilege academic and university knowledge over other types of knowledge are not reproduced in in transdisciplinary dialogues.

To address this profound change in the recognition of different types of knowledge—and, therefore, in the recognition of different epistemological subjects—Loorbach and Wittmayer (2003) call for reflection not only on the main problems, but also on the approaches, structures, and systems that reproduce them.

Epistemology from the perspective of feminist thought has stressed that knowledge is embedded and situated in a complex of materialities, expectations and common trajectories that contribute to building societies and their interpretations. This radical *situationism* of knowledge could cause confusion regarding the autonomy of knowledge and its capacity to be truthful. In this sense, Sandra Harding (1991) suggests "start thinking from marginalised lives". Start with the experience of powerlessness and show that it raises philosophical questions. That was the main phenomenological impulse of epistemic injustice, and that is why it is important that any knowledge about reality, any attempt to construct a social philosophy

in the broad sense is based on a story of what happens at the interpersonal level (Fricker, 2017).

In epistemological reflection, we need to establish and recognise epistemological dependence as a consequence of its political nature.

This question has been widely discussed since Kant himself established the pillars of modern epistemological thought. It refers to the tension between the autonomy of knowledge based on the existence of the subject (for whom, in the context of the Enlightenment, Kant offers his famous exhortation *Sapere Aude!*[5]) and the observation that the subject exists only in antagonism with the world and with others subjects, which he establishes in the *Critique of Judgment* showing the limits of autonomy and the origin of the later Hegelian dialectic.

Epistemic autonomy and dependence have followed the evolution of thought since then. Liberal interpretations would put the independent and isolated subject at the centre, as is the case in many scientific approaches (game theories or rational choice theories, to take some notable examples). Communitarian interpretations, on the other hand, would emphasise the social dependence of the subject, transferring to the social body the notion of the epistemic subject (which has also led to deterministic visions and, ultimately, not without a certain naivety, to what many today refer to as "collective intelligences" and other types of knowledge based on representative sampling techniques -- for example, when stating what a community thinks about an issue based on opinion studies).

In this sense, the solution to the dichotomy seems to lie in the idea of the need to take charge of the world, to think about knowledge from the perspective of a certain ecology. "If epistemic agency is distributed with the world and with others, dependence and autonomy can be thought of in a cooperative way, in a certain ecological spirit" (Broncano 2020: 158).

From this idea of cooperative knowledge and ecological spirit, new postulates can be established that integrate science into and with the planet and society.

A way of generating knowledge that radically motivates the need to situate knowledge, to listen to the voices and the knowledge that arise from resistance, of calling for essential transdisciplinary dialogue and critical nature as an expression of its transformative purpose.

In summary, we have proposed a reflection on the postulates on which theories of knowledge have been based. The goal has been to understand that the evolution of our scientific notions since modernity has resulted in epistemic failures that have their share of responsibility in multidimensional, socio-political and historical processes. From an epistemological reflection of a political nature, we better understand these epistemic failures and their importance, to the extent that it allows us to understand that society and what it will become is also epistemically constructed.

This same notion of political epistemology allows us to commit to a situated knowledge, with a purpose and aim that can also be expressed in terms of political interests, which is the basis for critical approaches to the theories that sustain social, economic and political frameworks.
The same notion sheds light on phenomena such as epistemic injustice and epistemic dependency. Both of these issues lead us to critically rethink what we know, while trying to unlearn information that does not have a basis beyond historically and politically established criteria of power.

The choice to overcome the epistemic failure of which we speak is to critically reveal injustices in order to choose a knowledge that in its praxis reflects the interdependent and eco-dependent nature of reality.

What happens with the postulates of knowledge happens in other dimensions of reality, such as politics and its institutionality, which also require critical analyses that focus on how they intersect, affect and influence interpersonal lives. We do so in the following sections. Those sections are dedicated to the analysis of the structures that have been generated in university institutions and influence how research and teaching practices are currently reproduced, as well as deployment in the classroom.

3. The structural dimension: political, institutional and staffing challenges

Although presented here in a nonstandard way due to the need to establish basic foundations, it should be noted that the political aspect of epistemological reflection finds a political correlate in what could be called the structures that demarcate the field of academia. By academia we mean the policies and institutions dedicated to generating, expanding and transferring scientific knowledge in the field of the University.

Consequently, the relationship between epistemology and the structure of the university system must be understood as a dialectical relationship built over the centuries. This "mental and epistemic architecture" in the case of the social sciences is joined with the way in which the University is organised (Vallaeys, 2022), determining the university structure which, in turn, solidifies the current disciplinary epistemological logic.

Thus, the epistemological issues addressed in the previous section, their characteristics and their effects on research, teaching and transfer practices and outcomes need to be complemented with reflection on different elements of the scientific and university system.

Some of these elements have had a major role in the cognitive drift that has characterised the University and, in particular, the place that the sustainability of life has occupied in the knowledge generated, transmitted and transferred in and by universities. The approach to these elements

is, necessarily in this case, that of a general view, even at the risk of overlooking two important issues. The first, that not necessarily all structural elements analysed here operate in the same way and exert the same influence on the nature of knowledge. The second is that the relationship between structure and individuals — which can be understood as research staff, teachers, research groups and university departments — is not homogeneous nor does it give rise to the same outcomes independent of the context and the particular circumstances of each society and each university.

This section focuses on how the institutionalised "structure" arising from the epistemological development discussed in the previous section establishes a series of limits and determinants that affect both the epistemological and paradigmatic turn, as well as the dialogue between disciplines.

An epistemological shift and dialogue between disciplines that is absolutely necessary to respond to the challenges posed by the eco-social crisis and to move towards other ways of understanding research and teaching to address these challenges.

We have identified some of the main limits and determinants, as well as their effects and consequences, and they are outlined below.

3.1. The institutional limits and determinants of the scientific and university system

As in most countries, the Spanish knowledge system is complex and is structured around two different subsystems: the scientific system and the university system. In this paper we focus on the university system, one of the most important parts of the knowledge system. This is also where our object of study is specifically located. However, many of the elements analysed are clearly applicable to the analysis of the scientific system as well.

3.1.1. On the disciplinary structure of the scientific and knowledge system

One of the main characteristics of scientific systems in general, and of university systems in particular, across countries is the disciplinary nature of those systems. Regardless of the scientific culture and areas of knowledge recognised in different countries, the defining characteristic is a clear demarcation between disciplines and the consequent differentiation of their objects of study, their theoretical and doctrinal bodies, and their epistemic communities.

This has led to a historical construction of scientific systems and their main instruments (i.e. universities) based on disciplinary boundaries. Although these boundaries and institutional determinants of the scientific system and knowledge have favoured the development of scientific knowledge itself, they have done so by exercising an important disciplinary and directive power of research and teaching action.

The claim is not that the knowledge that makes this disciplinary separation possible is irrelevant. Such knowledge is relevant, even more so at a time when society needs answers that demand a deep specialisation. This depth is possible precisely because of the knowledge that has allowed the development of separate scientific disciplines.

But this fact does not prevent us from pointing out that disciplines, in the same way they contribute to knowledge of reality based on the accumulation of knowledge generated in each of them, also lose their potential for structuring knowledge when they develop under compartmentalised logics.

Compartmentalisation, along with the difficulties in establishing bridges between disciplines, that impedes an appropriate and thorough understanding of the multidimensionality and complexity of phenomena in our world.

This question is crucial in a context such as now, characterised by the growing interdependency and the consequent transformation of the nature of the world and changes to political, social and biophysical phenomena. The magnitude of the systemic crisis, the comprehensive and multidimensional nature of the challenges that global society faces demands the construction of a multi-, inter- and transdisciplinary knowledge. We are, therefore, facing an obvious challenge for a system of knowledge that is based on disciplinary compartmentalisation.

In fact, some of the consequences that this "disciplinary logic" entails for the university structure itself are highly relevant for the type of knowledge it generates and for the people who carry out their academic work in them. This disciplinary logic has a determining influence on the way in which university studies are structured and ordered. Research lines also stem from areas of knowledge that mostly align with disciplinary boundaries[6] . Although it seems that dividing lines are less rigid than they once were, the truth is that the university structure around areas of knowledge has had, and continues to have, a great influence on some issues that are essential to the arrangement of scientific knowledge and the course of academic careers.

An important consequence has been the difficulty of incorporating critical or cross-cutting visions that do not fit easily into knowledge structures that are based on historical disciplinary divisions.

Generally, the reason for this difficulty is not that these are visions that respond to irrelevant considerations or that do not deserve to be studied. Rather, at least as concerns this work (which focuses on the sustainability of life and connect fields such as development studies or feminist studies), for reasons that stem from the dialectic between disciplinarity and the development of university structures. That is, because they are visions or fields of knowledge that have not found a home in

the university structure; because they have not had an epistemic community with sufficient capacity (or power) for promotion; because a vision's nature does not fit with the disciplinary logic because its object of study is profoundly heterogeneous; or because they do not have the historical tradition of other areas, fundamental characteristics of the areas of knowledge set out in the 2001 Spanish law on universities; or due to a combination of several of the causes mentioned.

This state of affairs, in which there is an absence of the sustainability of life, of development studies or of feminist studies as a fundamental concern of the sciences, does not seem to have been altered in a meaningful way with the approval of the Organic Law on the University System (LOSU) (Organic Law 2/2023, of 22 March, on the University System). This came about earlier with the approval of its predecessor, Organic Law 4/2007, of 12 April, also known as LOMLOU, which amended Organic Law 6/2001, of 21 December, on Universities (LOU), article 71 of which is dedicated to the establishment of areas of knowledge (Sianes, 2016). Although it is true that the LOSU proposes some advances in terms of multi- and interdisciplinarity[7], the organisation of the university system around areas of knowledge is not questioned, so it can be said that these continue to give order to the Spanish university system.

But disciplinary logic, in addition to the structure of the university system, also has other important effects. In the institutional field, another consequence of the disciplinary logic is found in the fact that degrees, subjects, research groups or studies most strongly linked to

fields or disciplines not recognised as an area of knowledge encounter real difficulties in being accredited, evaluated or taking part in international academic exchange programmes (Sianes, 2016). For the time being, this issue is only mentioned to draw attention to the consequences of disciplinary rigidity and compartmentalisation, as well as the absence of an eco-integrative element in the approach to scientific disciplines in our university system. Later in this work, there is a discussion of the logic of the evaluation of university research and its effects on the university system as a whole and the drift of scientific knowledge.

There is another element of great importance arising out of the rigid disciplinary logic that affects the hiring of teaching and research staff, given its relevance in the processes of accreditation and recognition of research blocs. This is stated in a study overseen by the Spanish Network of Development Studies (REEDES), which points out that "the National Agency for Quality Assessment and Accreditation (ANECA) in the course of its teaching and research activity accreditation duties, the National Commission for the Accreditation of Teaching and Research Activities (CNEAI) evaluating research blocs, or the universities themselves when they undertake faculty and researcher searches and hold selection committees, continue to adhere to areas of knowledge with total force" (Sianes, 2016, p.8).

We should also speak of an effect on the student body. Students undergo a training process characterised by the predominance of knowledge that currently follows a historical and scholastic configuration of the disciplines that

holds unidisciplinarity as superior to multi-, inter- and transdisciplinary visions more in line with the challenges posed by the threat to the sustainability of life at this historical moment of systemic crisis.

As a result of all the above, it becomes clear that the implications of this fact transcend the University itself and affect society as a whole. This extends to the way of understanding and framing the problems that affect students' lives and how to address those problems.

When disciplines or fields of knowledge with significant potential for understanding the great challenges of our time are pushed to the margins, this leads to an impoverishment of the University's capacity to intervene in public dialogue, in social knowledge and in political debate around the main problems facing our global society.

We find, therefore, in this close relationship between disciplinarity and the development of university structures some reasons that explain how certain fields of knowledge end up separated from the core of university studies and research specialisations. A significant portion of development studies and the sustainability of life are in this situation. The content that fall within these fields are largely excluded from the

numerous curricula and encounter difficulty in making their way into university degree programmes.

This disciplinary logic has also shaped the strategies and dynamics of numerous university departments, which are often excessively hermetic and reject disciplinary openness, even more so in the case of cross-border dynamics.

Undoubtedly, one of the elements of academic growth and intellectual enrichment that gives meaning to academic activity is contact with the university community, namely the peer group of departments and faculties. But this same community, and especially other departments and faculties, also exert limits and restrictions that contribute to reproducing disciplinary rigidity, competitive logic and limitations when it comes to innovating through heterodox approaches and visions. This is not always the case, and not all influence exerted by the academic community pushes in this direction, but it cannot be ignored that inflexibility is an effect which often acts as a limit, especially when disciplinary boundaries are pushed. In the same vein, we can sense an important normalising power exerted by academic peers as a result of defending the disciplinary structure.

This tension between openness and closedness is evident when observing the difficulty of structurally adding sustainability to the curricula as a "disciplinary" challenge to the extent that sustainability resets the objects of study of all disciplines. This is despite the fact that the Conference of Rectors of Spanish Universities

(CRUE) undertook a commitment to curricular sustainability in 2005, and reaffirmed its commitment in 2011 and 2012. These steps are embodied in the document *Guidelines for the introduction of Sustainability in the Curriculum*[8].

In this document, Spanish universities propose a series of general criteria and principles that integrate an interdisciplinary and transdisciplinary approach in response to the socio-environmental problems stemming from unsustainable lifestyles (CRUE, 2012). The principles set out in the proposal also recognise the importance of the protection of human rights and participation in political life, which shows a multidimensional approach to sustainability. This issue is important because, although the idea of sustainability has been able to expand over the years, this proposal continues to be valid and it keeps a political and institutional commitment to sustainability in Spanish universities as a possible course of action.

This document also points out important challenges related to the nature of knowledge and the type of teaching that the University should promote. It specifically states that:

> ... the University should not limit itself to generating disciplinary knowledge and developing skills. As part of a broader cultural system, its role is also to teach, foster and develop the values and attitudes required by society. Universities must prepare professionals who are able to use their knowledge, not only in a scientific context,

> but also for social and environmental needs. It is a matter of approaching the entire educational process in a holistic way, introducing sustainability-promoting abilities in a cross-cutting way, so that students learn to make decisions and act according to principles of sustainability. (CRUE, 2012, p. 2)

This plan for curricular sustainability, which included an ambitious vision and a roadmap with a clear plan of action still has not been effectively implemented in Spanish universities and there is still much work to do in areas such as curricular review, incorporating sustainability principles into hiring and promotion of teaching staff or in the evaluation of research (Herrero & Jerez, 2022). These aspects were expanded and deepened in 2024 with the signing of the Commitment of Spanish Universities to the 2030[9] Agenda, and they are still of great importance for reversing the current commodifying drift that affects the University in Spain and throughout the world, as described in the following section.

In light of these difficulties in holistically approaching the educational process, it is fitting to suggest that disciplinary compartmentalisation constitutes, in dialectical terms, the thesis (one which has seen great diffusion at that). On the other hand, the need to mainstream the notion of sustainability of life from a multidisciplinary logic constitutes a kind of antithesis.

Perhaps the overcoming synthesis could be formulated as the critical and profound revision of the postulates, which could give birth to an eco-integrative, transversal and transdisciplinary knowledge in a dialogic and transdisciplinary way.

3.1.2. On the commodification of knowledge

A process of commodification that has reached all areas of life is one of the phenomena with the greatest impact the transformation of global society's dynamics and structure. The transformation of world that occurs as a result of the interaction between the economic, social, political and ecological spheres is intersected by the growing phenomenon of commodification (Unceta, 2014). This is a question that profoundly challenges knowledge, since it involves a change in the structures and dynamics that shape reality. How could it be otherwise? These changes in knowledge transform the very structures and actors that produce and transfer knowledge, so the challenge presented by the processes of commodification is multifaceted.

The commodification of knowledge as a more recent process, and commodification as a prompt for the historical processes of economic and social transformation, have also crystallised in the institutionalisation of universities, which are not immune to the growing processes of commodification.

Therefore, we speak of the commodification of knowledge in a three-part sense: commodification of the processes of knowledge generation -- that of the conditions in which knowledge is produced, with its motivations, interests and visions; that of the processes of knowledge transfer, and of the orientation of knowledge; and that of the type of knowledge, its objects of study and its objectives – from a logic increasingly led by the market.

The existence of abundant and systematic evidence of commodification in the three areas mentioned above allows us to speak not only of commercialising practices, but also of the commodification of knowledge as a structural phenomenon.

It is important to highlight how the LOSU legislation challenges the processes of commodification of the university system. In response, the law points to the nature of scientific knowledge as a "common good" and the commitment of institutions and universities to Open Science. The LOSU states
also the commitment to the promotion of "Citizen Science as a field of knowledge generation shared between citizens and the university research system" (LOSU, art. 12.10)[10]. The normative and instrumental implementation of these principles will be of great interest. Budgetary concerns will be a matter to watch as well, as

the allocation of funds allows this critical spirit of this legislation to be manifested in the face of the commoditising drift of the University.

In this sense, the limitations of public funding for research, which have been highly pronounced in Spain in recent years[11], spur competition for public resources and private funding.

The latter, due to the scarcity of public funding, becomes a source of financing with greater relative importance over time. This normalises competition for resources, as dictated by market logic. Such competition stands in contrast to public funding, which can be guided by criteria of social utility.

Here, moreover, lies an important paradox, since we are talking about a shortage of research funding in a system such as the Spanish one which requires conducting research (as a right and as a responsibility, as stated in article 11.2 of the LOSU), but which *de facto* prioritises research over teaching. The consideration of research as the main marker of academic achievement in a an environment of scarcity for research support places the Spanish university system--and those who work in it--in a particularly anomalous place given the historical underinvestment in research. In spite of this, the Spanish University manages to be "competitive" both in relation to the number of publications and the position of its universities in international rankings (Brugué, 2022). It is worth asking what the cost of this “competitive character” is, in addition to that of the aforementioned reproduction of market logics over logics of social utility. It does not seem mistaken to point to the

(self-and over)exploitation to which teaching and research staff are subjected as an important factor quality and job dedication. This is especially true of staff in precarious employment situations. Nor can we ignore, as will be highlighted below, the impacts on inequality that this entails, especially in the case of gender inequality.

On the other hand, the transfer of knowledge, a fundamental pillar of university work, is also exposed to market logic. Knowledge transfer is practically absent in the processes of evaluating academic careers and so it has been made invisible and relegated to a subordinate place in the work of universities. Despite constituting one of the fundamental purposes of the University, this subordination supposes, *de facto*, an instrumental relationship with actors external to the University, widening the gap between academia and society[12].

This transfer work is necessary notwithstanding its level of academic recognition, and yet it has been largely conducted in an outsourced way, through processes of commercial bonds and based on extractivist and instrumental logics. What would be preferable is making knowledge transfer part of a more institutionalised and regularised exchange that gives rise to a structural and systematic link between research and transfer to based on a greater dialogue between the University and society, institutions and market actors.

However, there is a paradox around this fact that contributes to the commodification of transfer work because this situation generates significant economic incentives in parallel to academic work. It should be noted that many of academic careers play out in conditions of precarity and instability (at during a long initial phase). These are conditions in which transferring knowledge to external recipients becomes an option to make one's own academic career viable. The paradox is twofold, since it weakens the employment situation of those people in the weakest position to compete in the market for knowledge transfer, and it weakens the work of university knowledge transfer by exposing it to market forces, as academic knowledge transfer does not always find its footing in market mechanisms.

In addition to the above elements, it should be noted that the orientation of research work has been co-opted by the publishing market that revolves around the "impact factor" of academic journals as the main measure of quality.

This is a measure that is highly questioned due to its commodifying and quantitative nature, but it is absolutely hegemonic, to the point that a global market for academic publications has been articulated in which many of the problems and dysfunctions of scientific knowledge revolve around the main impact factors. More will be said about this question and its central place in the evaluation of research work

in the next section.

These are just a few examples that show how commodification runs through the entire process of knowledge, which is stressing, denaturalising and distorting to the University as an institution. They are examples of how knowledge enters "competitive circuits" that distance it from its social dimension (Gómez, 2022).

Thus, as a result of the process of commodification of the University, knowledge is conceived from the perspective of commercial and instrumental value of its outcomes. This undoubtedly contradicts the principles of the sustainability of life, whose research outcomes have a high social and political value.

This therefore is tantamount to the commodification of the University, an issue that affects all options for generating knowledge committed to the sustainability of life (Celorio & del Río, 2018).

But, in addition to the transformation of knowledge itself, one of the most important effects of this commodifying drift is the fact that teaching plays a small part relative to the much more decisive role of research in academic careers. This is true inasmuch the metric addresses the impact factor of research outcomes—but not social utility

of knowledge—on which international rankings of "quality" of universities are largely built (Unceta, 2014). This is a very important dysfunction in a university system such as Spain's, in which the balance between teaching and research is one of its keys. In practice, we observe how the de facto asymmetry that exists between the two, partly as a result of the processes of commodification, has not stopped growing in recent decades.

It should be emphasised that this system is based on market criteria and not on social utility. It is a system that values research over teaching, which means that the latter is relegated not only in objective terms (review of academic careers and university rankings), but also subjective, related to prestige and "value" of academics and universities alike (Gómez, 2022).

It is very striking, as Quim Brugué (2022) puts it, that the two main activities of academic work are "dedication to research work" and "teaching load". The truth is that it is a descriptive name and a performative one, since university teaching seems to have become a "heavy burden" that at a certain point hinders an academic career, insofar as the opportunities for growth and advancement are determined by a research logic. In fact, it is a career in which the greater accumulation of academic successes leads to more freedom from the teaching load. This system, logically, leads to a loss of quality in the instruction processes that directly impacts the students.

Far from questioning individual decisions, this matter is positioned as part of the structural analysis. It should be clarified that, in most cases, when we talk about growth and development of an academic career, we mean achieving reasonably decent and stable working conditions that allow us to avoid precarity, while guaranteeing autonomy and freedom.

The process of commodification does not only have a political, structural and institutional dimension. As noted above, we can find profound consequences on the personal level that, due to the advance of cognitive capitalism, reinforce systemic issues. As Lucía Gómez (2022) points out, the logic of commodification leads those who make up academia to assume that the academic's "identity takes the form of the self-entrepreneur". Consequently, the curriculum vitae is prioritised above anything else as "as a means of individual valorisation" (Gómez, 2022) that, in the end, will open the doors to access an academic career. It is logical, from an individualistic and rational perspective, that efforts should be dedicated to this; and it is also a logical result of this that the expansion of the curriculum ends up giving meaning to academic activity.

This issue, in addition to reinforcing the systemic effects discussed above, has a devastating effect on the people who sustain the academic activity of universities: it affects their lives, their health, makes the vulnerability of bodies invisible (to the extent that it penalises this vulnerability), it is a source of discomfort and disarticulation of solidarity, cooperation and care (Gómez, 2022). Moreover, effects of the commodification process accentuate and deepen gender inequalities, to the extent that they more violently

affect women than men. It is women who end up seeing their university careers undermined in very different ways such as abandonment, expulsion, relegation or overexploitation (Bustelo, de Dios, Pajares, 2021).

The entire process of commodification of the University outlined here is in open contradiction with the role that the University has traditionally played in elements as vital to emancipation as the contribution to building a society grounded in the idea of people's rights, freedom and creativity (Alonso, 2018). This is an important role for the University's contribution to transforming reality through critical thinking, and yet it has been largely rejected and relegated as a result of the process of commodification that the Spanish University has endured (Unceta, 2014) and which has led to the cognitive capitalism described in the first chapter.

Given this context, and largely as a result of disciplinary logic and the commodification of knowledge (but also as a facilitating mechanism for these two processes), it is necessary to examine the role played by the research evaluation system.

Research evaluation is a cornerstone of the university system that also underpins an asymmetrical logic between disciplines or fields of knowledge.

The next section confronts this issue.

3.1.3. On the evaluation of research and its centrality in the orientation of Universities

The above elements – disciplinary rigidity and compartmentalisation, plus the commodification of knowledge – are very closely linked to the existence of a model of promotion within the university that cuts against the incorporation of sustainability among the concerns of the academic community, in both university teaching and research. This model, based on a system of incentives and recognition of academic activity, is decisive in understanding how some of the most important limits of academic activity are specified and reproduced, affecting both teaching and research work.

While this is a global phenomenon (to be elaborated on later), it has some features that in the case of Spanish universities are crucial.

One of these features is that we have an academic recognition system that is fundamentally based on a highly commodified evaluation processes, both in teaching and in research. It is a system, moreover, that prioritises research credit over teaching credit in a very unbalanced way.

The system puts the individual at the centre, thus ignoring the social and interdependent nature of knowledge, as well as the existence of very different conditions and possibilities

that result from structural differences that cross academic careers. In other words, in order to gain promotion in an academic career, teaching and research staff receive an unmistakeable message at the outset: achievements in research are much more valuable than achievements in teaching.

As can be seen from its link with the research evaluation system, the model is built on production-focused criteria, is highly hierarchical and reproduces asymmetries between areas of knowledge, approaches or visions. This statement is not to question the importance of the public dimension of research work and the significance of publication in different media. On the contrary, the aim is to highlight the hegemony of the "impact factor" as the main -- and practically only -- measure of the quality of research. We also wish to point out that this is one of the main structural problems that affect academic work and limit expansion, revision and epistemological and disciplinary interdependence.

This statement is based on the observation that the current research evaluation system in practice contributes to deepening the cycle of commodification of knowledge, to reinforcing unidisciplinarity. The current system also avoids questions and critical approaches that, despite being at the basis of scientific revolutions (Kuhn, 2019), meet with enormous difficulty when trying to guide research works that can be published in journals with a high impact factor. The result is that increasingly less disruptive work is being published (Park & Funk, 2023).

FIGURE 2

THE INFLUENCE OF RESEARCH EVALUATION ON THE GUIDING FORCES OF THE RESULTS OF SCIENTIFIC RESEARCH WORK

SOURCE: AUTHORS' OWN PREPARATION BASED ON AGENJO-CALDERÓN (2020).

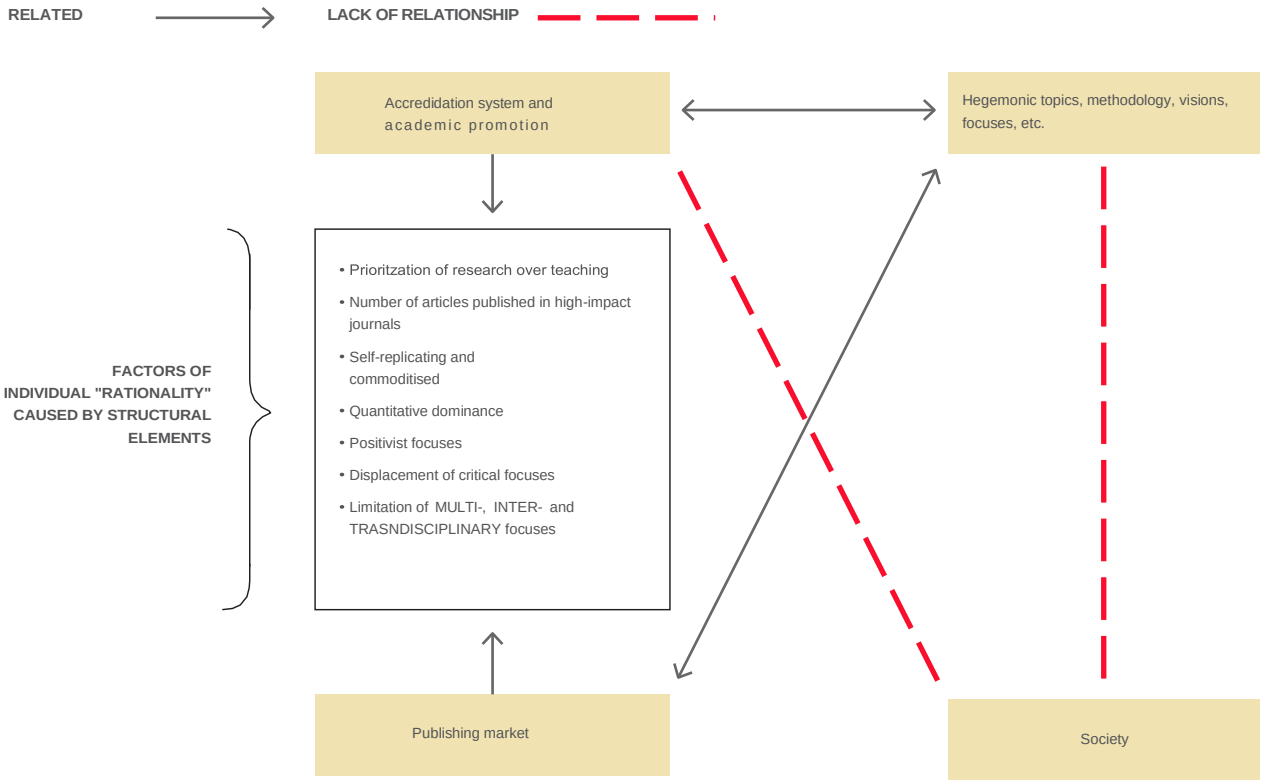


Figure 2, on the previous page, provides a synthesis of the aforementioned effects, as well as the importance that the research evaluation system exerts on the entire process of construction and transmission of knowledge. It illustrates how the logics of commodification and "crisis of knowledge" are reinforced.

By crisis of knowledge, we mean the tendency towards simplification of knowledge mentioned in the previous section (one-dimensionality, absence of critical visions, universality versus pluriversality, quantitative focus, etc.).

This relationship between the hegemony of the publishing market and its quality criteria with the evaluation of the quality of university research can be said to be essential to defining the focuses of research and teaching approaches, as well as in the process of hegemonising orthodox visions, which often do not consider social utility.

This recognition model, in turn, is very decisively based on achievements linked to the areas of knowledge, which contributes to strengthening disciplinary rigidity in the structure of the University and in the research processes in these areas.

This situation shows that, in order to promote the sustainability of life from the University, and particularly through university research, it is as urgent as it is necessary to review the accreditation system for academics, and the procedures for the recognition of research production (Sianes, 2016; ACUP, 2017; Alonso, 2018).

Therefore, it does not seem realistic to discuss the need to generate critical knowledge infused with sustainability-focused values and principles without linking it to the need to review the system of recognition of academic production. The contribution of research to sustainable development must be incorporated as an effective recognition criterion (SDSN Australia/Pacific, 2017).

At the same time, it is not possible to make this demand if the relationship between the current system of university recognition is not linked to the commercial drift of the University. As Koldo Unceta (2014) puts it, "the uptake of quality management and measurement models that come from the business world and that have little to do with the examination of what the University contributes to society" (p. 30) is at the root of this problem.

It must be stated that this is a systemic issue that is part of the structure of the university system, but whose internalisation and individual reproduction is tremendously thorough. The teaching staff have understood and assumed that this is the stage on which scientific careers play out and that adapting as best as one can is the path to a successful academic career. In this we find an explanation for the reproduction of this commodified and production-focused logic that is hegemonic to the extent that it defines a utilitarian rationality that imposes itself in academia. It should be noted that it is a systemic issue and that it responds to

scientific and university policies. These same policies are intersected by global dynamics that have adopted the existence of quality rankings that order academic activity and establish asymmetrical relationships within it, which are also characterised as epistemic injustices, insofar as they value or discard knowledge according to its suitability.

The result is high inter- and intra-university competition. Fernández Enguita (2014) points out, regarding this system, that:

> ... The result is that the researcher's career is increasingly penetrated by hunting and gathering points. Young and not-so-young researchers are pushed to look for the minimum publishable unit instead of the comprehensive work; indexed journals instead of those that reach the audience they want, be it general or specialised; the topic that promises to be well received by the evaluators, whatever it may be, instead of the one they consider to be of real general or personal interest. In short, what they must do (what is necessary) is imposed on what they should or want to do – as important as ethics and will are in the field of research...

The result is points and requirements that do not follow a logic of social or collective interest, but of "publishable" interest or of fit in the publishing market.

It is not surprising that this system of evaluating the quality of research is not encouraging of critical views in the face of dominant and conventional approaches.

Within the system are found important keys to explaining the reproduction of hegemonic visions and resistance to change in academic dynamics in the sciences, disciplines and areas of knowledge.

This is true to the extent that, based on the logic of incentives and recognition, the system acts by penalising certain approaches, thematic areas, epistemological positions and theoretical proposals located on the academic margins. Despite the fact this knowledge may be of great importance to providing critical knowledge regarding the problems of our society.

On the contrary, there exists in the sciences at least a significant distance – if not a disassociation -- between academic recognition and contribution to social and political transformation in the field of research.

Fernández Enguita (2014) elaborates on this discursive line by stating that this "recognition system" has made the University even more endogamous (in the sense that it is a University that looks inward at itself). It is a system, that of accreditation of teachers, alien to the logic of impact on society or its well-being. Fernández Enguita further holds that, "far from having brought about a democratic revolution in the face of to the old feudal university, it has brought a more medieval university. Probably less feudal, but more like a guild" (2014).

That is a harsh but precise way of describing the University. Given its guild character, the University props up unidisciplinarity and allows us to understand the very role

that departments and peer groups often play as "guardians of disciplinary essences" or, in more prosaic terms, as defenders of corporatism or guildism. These are logics that penalise encounters between disciplines, and that displace cross-cutting approaches such as gender, development or sustainability studies to the margins. Although it may seem obvious in the light of this diagnosis, these logics also displace collaborative and cross-border methods and other types of knowledge that are important for the processes of transfer and mutual learning between the University and society, politics or the market.

In short, we are faced with a research evaluation system that, as Przeworski points out, inhibits intellectual risks, giving rise to the packaging effect that comes later (Munk & Snyder, 2005). It is therefore a system with a strong repressive power, to the extent that it contributes to normalising academic pragmatism by negatively sanctioning heterodox and qualitative visions.

Although the problem is especially pronounced in Spain, since it is one of the few countries that has an accreditation system outside of universities, it would be a mistake to think that this is an individual problem or that only some countries are affected.

On the contrary, we are facing a global, systemic phenomenon that critically affects all countries. As such, it should be addressed globally and at multiple levels.

Specifically, we can point to two major global initiatives aimed at proposing an alternative to the current hegemonic system of research evaluation: *the San Francisco Declaration on Research Evaluation* (DORA) and the *Coalition for Advancing Research Assessment* (CoARA).

DORA is an initiative launched in 2012 by a group of editors of academic journals to review and transform the standards for evaluating research quality, stemming from the concern about the lack of connection between existing criteria and the social utility of research[13].

For this transformation, DORA proposes as a general recommendation "not to use journal-based metrics, such as impact factor, as a substitute measure for quality of individual research articles, to evaluate the contributions of an individual scientist, or in hiring, promotion, or funding decisions." To this general recommendation it adds a series of specific recommendations for funding agencies and institutions, and for publishers and organisations that provide metrics, all which are aimed at transforming the evaluation model, for which reducing the weight of the impact factor is an essential issue.

This initiative has been growing significantly and is currently supported by more than 2,800 university and academic institutions, as well as more than 20,000 academics worldwide. Among the institutions are Spain's National Agency for Quality Assessment and Accreditation (ANECA), regional research agencies, Spanish universities and academic journals[14].

For its part, CoARA is a more recent initiative from Science Europe and the European University Association. Like DORA, it was born from a critical analysis of the dominant system of research evaluation, but in this case the initiative has a proactive and transformative spirit that is more developed than DORA.

To date, CoARA is one of the most important forums for work and reflection of the global research community and European Commission for the revision of the aforementioned research evaluation system[15]. Still in its early stages, the organisation is part of an "*Agreement on reforming Research Assessment*", dated July 2022. The agreement covers various topics that are based on the same idea: evaluation is fundamental for the quality of research, but it must be reformed. There are three main zones where research is conducted: (I) research organisations and units; (II) research projects and (III) that of individual researchers.

The essence of the CoARA proposal is presented by 10 fundamental commitments (CoARA 2022), (Table 1).

TABLE 1

COARA COMMITMENTS

SOURCE: CoARA (2022).

1. Recognise the diversity of contributions to, and careers in, research in accordance with the needs and nature of the research.
2. Base research assessment primarily on qualitative evaluation for which peer review is central, supported by responsible use of quantitative indicators.
3. Abandon inappropriate uses in research assessment of journal- and publication-based metrics, in particular inappropriate uses of Journal Impact Factor (JIF) and h-index.
4. Avoid the use of rankings of research organisations in research assessment.
5. Commit resources to reforming research assessment as is needed to achieve the organisational changes committed to
6. Review and develop research assessment criteria, tools and processes.
7. Raise awareness of research assessment reform and provide transparent communication, guidance, and training on assessment criteria and processes as well as their use.
8. Exchange practices and experiences to enable mutual learning within and beyond the Coalition.
9. Communicate progress made on adherence to the principles and implementation of the Commitments.
10. Evaluate practices, criterio and tools based on solid evidence and the state-of the-art in research on research, and make data openly available for evidence gathering and research.

However, as already pointed out, the dysfunctions and distortions of this system are not solely an international and global issue. It affects each country, organisation, university, etc. in a direct albeit unique way. The problem even has a personal dimension, with respect to the position that each individual assumes when engaging in dialogue with the structure. This does not mean that solutions can come from individual action and will. It is mainly a matter of approaching the problem as a problem of collective action, be it in institutional, national or global terms.

In the specific case of Spain, it is essential to address a process of review of the evaluation of research since, as discussed earlier, it is one of the few countries that has an evaluation process external to universities. This makes the problem more glaring and doubly complex.

In addition to the elements mentioned, there is a need to incorporate a framework for collective evaluation based on the work of research groups, departments and research institutions, as opposed to the current individualistic and competitive model.

Specifically, there is a need to move not only towards a more rational, qualitative and decommodified model, but also towards a model that avoids the idea of the "individual" merit of researchers and focuses on the idea of the collective, community and social merit. Such an approach is much more in line with the social production of knowledge.

3.2. Effects and consequences of structural limits and determinants

The analysis of some of the features of our university system has already highlighted different effects that hinder the epistemological, political and institutional transformations that are necessary for the University to achieve a firm commitment to the sustainability of life. Difficulties that have their correlate in the exercise of university teaching, as addressed in the next chapter of this work. Before addressing that part, it is worth dwelling in a little more detail on some of the effects that undermine
the commitment to the sustainability of life caused by the limits and structural determinants analysed. Limits and structural determinants that are of special importance to know the cornering of related issues
with sustainability in the university system in general, and in teaching in particular. We focus on four effects that, although not the only ones, due to their importance, deserve special attention.

3.2.1. Hegemonising effect

The first of these effects could be called the *hegemonising effect* of academic approaches resulting from the influence of the academic incentive system that governs the careers of teaching and research staff. We hold that the relationship between the research evaluation incentive system and its central role in academic hiring and promotion is the key factor in determining dominant and conventional approaches. This is a question that offers important clues to explain the hegemonic views and

the dynamics of resistance to change (the entrenched practices are epistemological, theoretical and methodological in both research and teaching). This is observed in the university system in general, and in the various sciences, disciplines or areas of knowledge in particular.

This system of incentives—based on credentials, merit, and recognition that has given rise to fiercely competitive relationships, a tendency towards hyper-specialisation, a sort of elitist market for scientific publications, and a shift of teaching to a subordinate place in teaching and research careers—is traversed by mercantilist and productivist logics that are the result of, and at the same time lead to, a "crisis of knowledge". We understand this crisis as a tendency towards the simplification of knowledge, largely characterised by a marked one-dimensionality, by the absence of critical views, by the predominance of universalist visions over the idea of pluriversality, by a hegemony of positivism and "objectivism" in the face of an ontologically changing reality.

This relationship between productivism, commodification and the crisis of knowledge would be key in defining research and teaching approaches, as well as the process in which orthodox visions become dominant and where there is little room for sustainability.

This "hegemonising" effect not only has an impact on the dynamics of research generation and on the resulting type of knowledge. The problem also has political implications, since it puts us further away from many of the research questions and answers that the systemic crisis demands of us. The transformations required by this crisis are broad, complex and profound. These are changes that affect spheres as varied and important as the international order, power relations, social organisation, the relationship with nature and the model of production and consumption. These are issues that require a broad collective vision and a true will for change that will not be possible without a knowledge base to distil this vision and will. As things stand, there is no science that assumes that one of the main challenges to building adequate responses to a context of increasing complexity sits at this inter- and transdisciplinary crossroads (Innerarity, 2019).

3.2.2. Packinging effect

The second effect, drawn from the work of Przeworski, we could call the *packaging effect*, insofar as there are numerous dynamics that lead to deepening fragmentation and unidisciplinarity (i.e. packaging) as a way of advancing knowledge and academic careers. This is happening despite the clear deepening of interdependencies resulting from decades of globalisation. It is not surprising that sustainability, which demands a multi-, inter- and we could say transdisciplinary approach, does not fit well within this packaging.

In an interview, the Polish political scientist said that:

> ... Graduate students and assistant professors learn how to package their intellectual ambitions in articles that can be published by a few journals and to avoid anything that may seem to be a political stance. This professionalism produces knowledge from very narrowly asked questions, but we do not have forums to make our knowledge known outside the academy; in fact, we don't communicate about politics even among ourselves...
>
> (Munk & Snyder, 2005)

It should be emphasised, even at the risk of tedium, that the "packaging" effect does not refer to the to the necessary disciplinary specialisation that knowledge of reality demands. On the contrary, it has more to do with the tendency to sacrifice dialogue and exchange between disciplines for the sake of a strong defence of the all-encompassing capacities of the discipline itself.

It is also complemented by the trend towards micro-specialisation within scientific disciplines induced by the publishing market and the characteristics of the research evaluation system.

This is a state of affairs that academics usually deal with in their careers. Its effect is not only evident in lines of research and orientation of publications, but also in the curricula and teaching proposals in which sustainability occupies a peripheral place in the best of cases.

3.2.3. Homogenising effect

Thirdly, we can point to a *homogenising effect* that acts by making the professional trajectories of teaching and research staff follow the same path. Several elements that were discussed earlier, such as the research evaluation system that governs accreditation processes and the consequent displacement of teaching, tend to generate a "homogenisation" in academic profiles.

The main cause of this effect lies in the fact that a constant message to teachers in their academic career is that teaching cannot be their main concern or occupation because this will mean a loss of competitive capacity in an area that has become radically competitive (that is, research). This is undoubtedly a hard message for the many people who were moved to join academia by a vocation for teaching.

Dedicating time to preparing subjects, to establishing and cultivating relationships with students, to attend to their academic and intellectual demands and needs – not to mention vital needs, as the pandemic clearly showed how health or socioeconomic conditions are decisive for academic and intellectual development -- marking student work, arranging internship opportunities,

developing innovative teaching projects or seeking further training as teachers is perceived as a nuisance and a burden that reduces opportunities, except in those cases in which the teaching vocation ends up practically leading to a militant attitude.

It is a paradox that the effort to better perform a central part of the work of teachers leads to penalisation for doing that work, but the university system produces this reality.

As Ken Bain (cited in Gutiérrez, 2022) argues, there are numerous ways to be a good teacher. Someone can be a good teacher in a given field by being leading researcher, or someone can also be an excellent teacher by having a broad and deep knowledge of their field thanks to studying the contributions of other colleagues. Someone perform terribly as a teacher – surely everyone who has passed through university classrooms will be able to attest to that – while being a the leading figure in research in a given field. In all cases, becoming a better teacher is possible with time and resources to cultivate and develop the fundamental skills of teaching, and with sufficient time to apply those in the practice of teaching.

However, some of the characteristics of the current university system—and once again we come up against the current system of academic promotion that gravitates towards the evaluation of research—cut sharply against the profiles that receive university job offers and determine much of the "success" of

academic careers. It is based on what Ken Bain describes as the traits of "a good teacher" – a teacher who, in addition to knowing their field of study in depth, dedicates time to asking questions, and putting them into practice, about how the instructor approaches and practices teaching, why he does it, how their students receive it, how a teacher relates to students, how the teacher evaluates them, and how teachers evaluate themselves, among other matters (Bain, 2005)—are not among the concerns that the current system prioritises. In fact, it sees them as a liability, since in this context academics are tempted to neglect their teaching work or, at the very least, not prioritise development of teaching abilities. Assessments of teaching, such as they are, centre on quantitative criteria related to the number of hours taught and the number of hours dedicated to teacher training courses or seminars. These elements, far from encouraging learning and improving teaching capabilities, favour a very specific profile: that of someone who is productive and adaptive.

3.2.4. Centrifugal effect

A fourth effect is found in the expulsion of certain fields of knowledge and critical postulates, such as sustainability, in the curricula of the social sciences and the concerns reflected in social science research lines.

This *centrifugal effect* -- which distances sustainability from the core of teaching and research practice, from the curricula in bachelor's degrees and in dual degrees -- is related to the compartmentalisation of the areas of knowledge, but also to the lack of sufficient mainstreaming.

In this sense, a recurring idea both in the literature and in the discourses analysed in this study is the absence of an overall and coherent vision of sustainability. In this regard, there is agreement among visions from different degrees programmes. It is not that sustainability is not present in degree programmes, but that when it does appear it does so in a highly fragmentary way. Although there is content on sustainable development in many different studies, there is generally no connection in how this is addressed in the different subjects. There is no "framework" or coherence with respect to the approach to sustainable development in most of the social sciences degree programmes of Spanish universities.

A reflection of this is that on most occasions when teachers incorporate sustainability, they do so as a topic to be dealt with at the end of the courses, as a final addition to the syllabus of the subjects and that will only be addressed if there is time to do so. This may seem like an anecdotal or one-off issue, but it is pointed out here because it shows the tension between the needs observed by teachers, the restrictions on their approach imposed by structural limits

mentioned above and the way they are reflected in teaching proposals based on curricula and syllabuses that are blind to sustainability issues.

Today, the inclusion of sustainability issues is the result of individual, voluntary and often voluntary initiative. It does not fail to reflect a scant importance even for teachers with the greatest will and commitment, who tend to relegate them to a secondary place in their subjects.

The centrifugal effect, like the homogenising and packaging effects, has historical and structural causes. The necessary transformation, therefore, must also take a structural perspective. It is especially important to point out this idea in a context in which, as Francois Vallaeys (2022) notes, any attempt to break with a rigid disciplinary logic, to transversalise approaches, perspectives, etc. or to commit to inter- and transdisciplinarity is highly limited, solitary and yields few results. It is necessary, in the face of this, to call for a structural approach, and the only way to do so is by "activating levers of change", which necessarily involves the "management of truly transversal policies such as, for example, the quality and accreditation policy" (Vallaeys, 2022, p. 43). It is a question of generating the conditions of possibility to transform teaching practice. To this end, it is undoubtedly essential, as addressed in the next chapter, to reflect on and transform the exercise of teaching, with reflection and critical practice of our teaching work as our starting point.

4. Some notes to transform teaching: where to start?

This research work also explores the main implications that the current context of systemic crisis and a transformative reading of the 2030 Agenda can have for teaching. In this sense, it is start by addressing some recurring questions that can serve to frame and guide reflection and analysis: what is it to educate? What is the place and function of the teacher in the current context of a multi-faceted crisis? How can emancipatory and transformative learning spaces be generated? How can articulation between the University and other learning spaces such as communities, the social fabric, etc. be generated? Or the fundamental question that, according to Garcés (2020), we should ask ourselves as a society: how do we want to be educated? This question is so critical because, as the author points out, "we are all apprentices in the workshop where possible ways of live are practised".

Taking these questions as a reference, we offer here some notes that can serve as a starting point for reflecting on the essential transformation of university teaching in the context of the current systemic crisis, which calls for a firm commitment to the sustainability of life.

4.1. Educating to transform a hegemonic order that threatens the sustainability of life

First of all, it is worth asking what it is to educate or what education is for. There are different ways of understanding education. The current pedagogical debate is dominated by views of education

that stem from instrumental logics that underline their adaptive function and that, in general terms, primarily seek to teach students to adapt to and learn to live in the society of a future that is assumed to be unpredictable and full of uncertainty. Simplifying the argument, it is considered that, in an increasingly complex and uncertain world, it is necessary to equip oneself with skills and abilities to adapt to changes. These are, therefore, ways of understanding education that assume the established order as given and focus on developing learning that allows continuous adaptation to a changing and uncertain future (Garcés, 2020); and these ways of learning are, therefore, at the service of maintaining that order.

There are also ways of understanding education from critical, emancipatory perspectives, which conceive of education as learning to think and collectively constructing shared futures. In other words, their main objective is to learn to understand reality in order to transform it: to think and build other possible futures as opposed to learning to adapt to futures designed by others (Garcés, 2020; 2022).

Or, in other words, to acquire knowledge that allows us to change course, build other viable and desirable outcomes in which "all lives fit" (Herrero, 2022, p. 14).

Education can thus be of a domesticating or emancipatory character. It can be at the service of the reproduction of the current neoliberal order or its transformation, and the

efforts of the educational community will influence which of these logics prevails in pedagogical practices (Giroux, Rivera-Vargas & Neut, 2022). Herrero (2022) puts it in these terms:

> ... educating people to legitimise the current model, fighting to position themselves in it in the most advantageous way possible, resigning themselves and blaming themselves – or others – for individual failure. Or educating so that people understand the great challenges that we have before us and acquire values, skills and knowledge that allow them to organise themselves to face those challenges... (p. 14)

In a complementary vein, the argument put forward by Díaz-Salazar (2015) is especially useful and illustrative, which identifies three dominant models of the University: the technocratic and neoliberal model, which describes most universities and is the most functional to the hegemonic "anti-ecological reproduction of the model of social production and organisation"; the humanist and social liberal model, whose main objective is to "train cultured and philanthropic professional elites"; and the liberating and transformative model, which seeks to contribute to eco-social change.

Taking these approaches as a starting point, it could be stated that the ultimate objective that should guide an education in accordance with an ambitious reading of the 2030 Agenda is the transformation of the hegemonic order. The prevailing order is based on unlimited economic growth and, therefore, incompatible with the sustainability of life.

This hegemonic order results in part from the epistemic failure presented in the opening pages and that is well illustrated in the omnipresence of the neoclassical vision of economics, which in turn is solidified in a university system built on the basis of disciplinary hierarchy and compartmentalisation. Thus, a transformative 2030 Agenda necessarily requires critical education, aimed, as Garcés et al. (2022) argue, at learning to imagine, think and build together other, just, sustainable and feminist futures.

According to Giroux, Aguayo & Rivera-Vargas (2022), neoliberalism is a "system of object production and a system of subject production" (p. 41). That is to say, it is not only a system of production, circulation and consumption that generates poverty, inequalities and degradation of ecosystems, but also leads to subjectivity and a configuration of social relations that promotes their reproduction and expansion. Thus, the hegemonic accumulation model needs a social subjectivity based on acceptance and resignation in the face of precariousness, on social indifference to common problems, and on a lack of empathy.

The predominant educational visions and strategies are designed from an adaptive logic, are aimed at teaching and providing students with skills and abilities to adapt to uncertain and changing surroundings, and contribute to building this subjectivity. They do so by assuming and normalising the situation of growing uncertainty and precariousness generated by the system. They also promote an individualistic vision of society, taking for granted that it is the responsibility of each individual to learn to adapt to uncertainty and precariousness that, to a certain extent, are assumed to be here to stay.

Likewise, pedagogical proposals that do not question or help to understand the structures that generate inequalities and injustices by altering ecosystems contribute to generating disaffection and aid in demobilising transformative collective action. Such approaches also limit and close ("shutter") the possibilities for transforming the hegemonic development model.

In this sense, according to Garcés and Herrera (2022), one of the main problems of education today is "the distance between functional intelligence and the emancipation of intelligence". The emancipation of intelligence is understood as the "ability to relate to shared problems through one's own thinking" (pp. 37-44). The current educational system produces mostly intelligences capable of managing a large amount of information and of prioritising it, but, at the same time, they are unreflective -- that is, current intelligences are incapable of thinking, of giving meaning to that information by relating it to "one's own and shared experience". It thus generates "a mass of intelligent serfs", with standardised knowledge and difficulties in thinking for themselves.

Giroux, Rivera-Vargas & Neut (2022) argue that, in the face of this "shuttering" pedagogy, which, as we mentioned, closes off the possibilities of transformation, what is necessary is a "pedagogy of rupture and possibility", a "cosmopolitan, imaginative, public-affirming pedagogy", which makes it possible to connect private problems with public concerns and that fosters commitment to the transformation of the world that

we live in, which allows us to "face the future as a collective problem" (p. 33). According to the authors, this pedagogy must start from the premise that the present constitutes the outcome of past struggles and disputes and, therefore, the future will constitute the outcome of disputes unfolding in the present. The present and the future can therefore be changed, and education must constitute a space for the construction of other futures, with the main objective of training people who collectively decide and build their future. In this sense, Garcés et al. (2022) highlight the importance of shared concerns and worries about problems found in all learning.

Any educational process with an emancipatory objective requires embracing the conflict, problematising reality in order to understand and transform it while working with others. It demands facing problems as a possibility to build different futures together.

In the current context of systemic crisis, the sustainability of life approach constitutes, as Herrero (2022) argues, a fundamental frame of reference from which to think and propose other forms of social organisation and of education itself. Along these lines, a fundamental challenge that arises is how to use teaching to contribute to generating learning processes that facilitate an appropriate and critical understanding of current challenges and provide knowledge, approaches and perspectives to influence and transform reality and the model of hegemonic "development" to make it compatible with the sustainability of life. The great challenge for teachers will be, therefore, how to steer students so that they can understand and make sense of their reality, as well as build and imagine

alternative forms for life and social organisation (Garcés et al., 2022, p. 3) that are sustainable, just, and feminist. This challenge, in light of what has been stated in the previous sections, seems to run opposite of the trends that have been gathering strength in the University in recent decades.

4.2. Rethinking the curriculum

A fundamental element in the transformation of teaching has to do with the curriculum -- the content that is taught. It may then be insightful to ask, as Herrero (2022) puts it, whether "we learn things that go against our own survival" (p.15) and to reflect on how to move towards an education that provides us with the necessary knowledge to transform a model that is leading us to ecological collapse, and which, according to Garcés (2023), makes us face a logic that denies the very possibility of the future. This is essential and urgent if we also consider the growing complexity of our world – the result of, among other things, the processes of transnationalisation and intensification of interdependencies in multiple areas. This has been widening the gap between what is taught and what, from this point of view, should be taught.

In the same vein, we consider it necessary to review the curricula in order to integrate the sustainability of life approach in a transversal way, so as to facilitate an epistemological turn in line with what is proposed in the first section of this work. It should be a review to incorporate the contributions of critical theories and fundamental perspectives to better understand reality and the processes of development, of social and political change and to act on them. Contributions such as

those from ecological sustainability, biocentrism, inter- and transdisciplinarity, interculturality, decolonialism and cosmopolitanism, among other possibilities.

As stated in the previous section, in the face of the general trend towards simplification of knowledge, with a predominance of one-dimensionality and Western-centric universalism, a lack of critical visions and the hegemony of positivism and "objectivism", an epistemological openness is needed and a dialogue between knowledge and disciplines should take place.

In the same way, it is not only necessary to review the explicit curriculum, but also the hidden curriculum that exists in any educational process (Giroux, Aguayo & Rivera-Vargas, 2022). Content that is taught includes hidden and implicit anti-ecological, heteropatriarchal and colonial discourses. These discourses contribute to reproducing the prevailing order, and there are more than can be listed here. It is a concealment that is an example *par excellence* of epistemic injustice. The uncritical acceptance of economic growth as the main objective of the economy and society, the assumption of a single linear idea of progress, or the invisibilisation of the ecological crisis, of care work and of the importance of the collective are just a few examples of hegemonic ideas that are taken for granted in the teaching of multiple subjects and that underlie a large part of the curricula of subjects at various educational levels in most countries of the world (Herrero, 2022).

In an effort to begin to move in this direction, Herrero (2022) proposes seven pillars (Table 2) on which to build an educational itinerary that puts the sustainability of life at the centre. Although designed for primary and secondary school, at least some of the pillars may be of interest as inputs for processes of reflection and revision of curricula of higher education: placing life at the centre of reflection and experience; to be linked to the nearby territory; encourage diversity; weaving community and reinventing the collective; learning and recovering knowledge that gives a larger role to sustainability; recognise and reject the model of maldevelopment; and to launch projects and experiment with alternatives.

TABLE 2. (CONTINUED ON NEXT PAGE)

POSSIBLE PILLARS FOR A CURRICULUM THAT PUTS THE SUSTAINABILITY OF LIFE AT THE CENTRE ACCORDING TO HERRERO (2022)

SOURCE: OWN ELABORATION BASED ON HERRERO (2022, PP.129-144).

1. PLACE LIFE AT THE CENTRE OF THE REFLECTION

- Learn about, understand and value the different forms of life and recognize ourselves as eco- and interdependent beings.
- Understand social metabolism: energy needs, water needs, land needs and natural resources needs, among others. Understand their use, control and unequal distribution and the inherent conflicts; understand how they have been commoditised; generation and processing of waste.
- Recognise the structural importance of the public for life and learn about the debt of members of the public owe among genders, social classes and centre/periphery that underpins the operations of the current economic system.

2. Connect with the surrounding territory

- The importance of fostering modes of economic and social organisation centred on the territory and create less pollution while consuming less energy and resources
- Connect education centres with the outside world: get off campus and work jointly with other experiences, groups and initiatives (and allow these to come in). Empower spaces shared by various types of knowledge and sensibilities.
- Take responsibility for territories. Know and quantify their limits.
- Acknowledge the importance of having enough and the non-exploitation of other territories.

3. Support diversity

- Understand diversity as the element that makes life possible.
- Have awareness and consideration of different cultures and ways of thinking, as well as decolonial movements and studies.
- Foster respect and integration of diversity in (dis)ability, sexual orientation, gender, race, etc.

TABLE 2. (CONTINUED)

4. Create a community fabric and reclaim the collective ideal

- Build learning communities connected to and involved with other social actors and groups. Establish relationships and networks to foster experiences in collective work.
- Recognise and provide a leading role for students, their experiences, knowledge and opinions.

5. Learn about and recover knowledge of sustainability

- Give a leading position to knowledge and practical experiences that, when taking a holistic view, contribute to a culture of self-sufficiency in concert with a world with finite resources.

6. Recognise and denounce the model of bad development

- Deeply and critically understand the model of hegemonic development, identify cause and effect relationships that underlie the main problems of today and assign responsibility.
- Consider and be aware of different cultures and ways of thinking, along with decolonial movements and studies.

7. Launch projects and experiment with alternatives

- Reflect on and imagine alternatives futures that place life at the centre.
- Learn about and/or launch alternatives that allow for advances in this direction.

It should be noted that the challenge of transforming the curriculum is enormous and faces multiple difficulties that are rooted in structural issues, many of them analysed in the previous sections. Among these are the different limits that characterise the scientific knowledge system and university today and the dialectical relationship that exists between disciplinarity and the development of university structures; the process of commodification in its various facets, which guides research and negatively affects the priorities of teaching and research staff according to criteria of commercial and instrumental value as opposed to their political value or value for social transformation; and an evaluation system that rewards orthodox theoretical visions and proposals and reinforces the trend towards the simplification of knowledge.

4.3. Teachers for the sustainability of life[16]

As previously analysed, the influence of commodification processes in the University is contributing to a prioritisation of the commercial and instrumental value of knowledge over its value as a force in politics or for social transformation. As part of this process there is a tendency to consider teachers as "neutral" transmitters of "objective knowledge". It is increasingly understood that the role of teachers is not to teach, but to steer, tutor, coordinate, and manage groups of students who self-start and self-manage their learning (Garcés, 2020; Giroux, Rivera-Vargas & Neut, 2022). Giroux, Aguayo & Rivera-Vargas (2022) insightfully describe it as a conceptual and practical "conveyor belt of knowledge" (p.51). This way of understanding the role that teachers must play implies a political deactivation of the teacher.

When we speak of a "political deactivation" we refer to the idea that seems to have been built up around university teaching (especially in the social sciences) according to which any political position in the exercise of teaching acts to undermine the objectivity of, and therefore delegitimising, the work of teachers. This assumption is paradoxical since the work of the teacher largely consists in the transmission of theoretical knowledge on which political proposals are based. Assuming that all theories are equally valid for explaining social, political or economic phenomena is misguided, and it would be equally misguided to affirm that teachers should not assume political positions, when political positions are precisely born from the affirmation of some theories over others. In addition, making such political positions invisible in order to pass them off as academic neutrality would be irresponsible in a context of systemic crisis that requires intellectual risks.

We could analogise a teacher who enters the classroom without a theoretical approach to explaining the object of study of their subjects and ignoring (or making invisible) the political implications of this approach, to a baker who tries to make bread without knowing how flour, water and yeast behave when they come into contact at certain temperatures. In a neoliberal and Fordist world, both may be making a living, but they could simply reproduce (pedagogical or baking) techniques without questioning them or producing meaningful advances out of their creativity, reflection or research. The first case would undoubtedly be much more contradictory and alarming.

For emancipatory pedagogies, on the other hand, the role of teachers is fundamental and they are considered social actors that work with the desired result of opening up the possibilities for transforming the future.

Teachers are, therefore, a political and politicising subject, which positions itself and encourages others to take a position on the main current problems and debates and their consequences (Giroux et al., 2022). In their practice as teachers, critical thinking is key, both in content and in the forms of transmission, and the perspective of sustainability of life. It is therefore necessary to promote initiatives that foster training in this type of approaches and perspectives and make it easier to integrate them into teaching practice (Herrero, 2022).

But it is not only important to incorporate critical thinking and the perspective of sustainability of life. It is also essential to abandon multiple biases (anti-ecological, heteropatriarchal and colonial, among others) that often exist in university teaching, both in terms of more subtle practices such as using non-inclusive language when dealing with students, or in the skills that are explicitly and implicitly transmitted (emotional, affective, types of leadership, care practices, social commitment, etc.).

Likewise, it is found in various settings that students have a growing sense that what they are taught at the University lacks meaning, that they are offered decontextualised knowledge

that has little to do with their interests and what happens to them; that what is taught is disconnected from reality, that it does not serve to fully understand the main economic, political, social, and ecological problems we face and to act to address them (Herrero 2022; Rivera Vargas et al., 2022).

Meaningful learning implies internalising and appropriating the content, feeling involved, acquiring one's own voice. Various studies show that "learning is contextual, biographical and embodied" and is mediated by "intra-actions[17] between people and the materiality of the world of which they are a part" (Rivera Vargas et al., 2022, p. 57).

Teaching with meaning implies taking into consideration the opinions and needs, experiences and knowledge of the students. Learners arrive at university with previous knowledge and experience, and it is essential that teachers recognise and take this into account.

It is also essential to recognise that "learning is traversed by the body, relationships, and affections" (Rivera Vargas et al., 2022, p. 65), which is why teachers must go beyond traditional practices that focus on transmitting knowledge and providing instruction. As we have stated before, knowledge is fundamentally a praxis. It is poorly characterised by the idea of transmission, as it requires a logic of dialogue and explicitness of the situation and awareness of its political and interdependent character.

However, at the same time that it is necessary to go beyond traditional teaching practices, it is important not to fall into some of the traps that characterise the current pedagogical debate, such as technocratic drifts that place an excessive focus on tools, methodologies or dynamics and end up turning means into ends. In this sense, it is advisable to be especially cautious with the growing prominence that digital technologies have gained, especially after the pandemic, to the point of being at the centre of many educational debates (Garcés et al., 2022). All too often they are implemented uncritically, without considering their limitations, power relations and that they can lead to a shutting out of possibilities for critical and collective reflection.

It should also be taken into account that it is common and understandable for teachers to resist changing teaching practices. Modifying the teaching methods means recognising the limitations of training and knowledge, losing authority, assuming that chaos and confusion can be created in the classroom, that mistakes can be made in the search for change (hooks, 2021, p. 52). It also involves identifying and acknowledging fears and concerns.

According to hooks (2021), one of the things that block teachers from questioning their teaching practices is the identification between their role as teachers and their identity. The resistance to questioning their teaching practices could then be explained because in some way it would imply a questioning of teachers' own identities. The attendant fear of criticism, or of losing the respect of the students, can be a major obstacle for many teachers when it comes to trying new strategies. The change in teaching practices is

risky and the teachers who are involved in this change are exposed to criticism and conflicts. When thinking of how to handle this, it may be wise to break with the good/bad teacher binary. Teachers often expect that devotion to a committed pedagogy will provide them with immediate rewards in the form of good evaluations and satisfaction on the part of the students. It is also hoped that the effort will make the teacher feel good and satisfied with their work. However, this is not necessarily the case. It is very likely that revamping one's approach to teaching will be a hard task, which does not always generate immediate rewards. It is important to be aware that it is a complex process, one that involves recognising failures and difficulties as ways of learning.

In addition, it is common for teachers' way of teaching to be affected by the way in which they have been taught, a model that is usually based on the existence of a supposed universal, one-dimensional and unidisciplinary way of thinking. The fear of changing the way we teach may also be related to a lack of alternative models over other ways of teaching. It is important not to give up on change because you do not have perfect practices or strategies (hooks, 2021).

Beyond reinforcing knowledge of certain approaches, it is essential to create spaces for training, meeting and dialogue where teachers can share these concerns and learn to develop other teaching practices.

In addition to balancing the weight of research and teaching in the processes of academic merit and promotion, another key element to make change possible is to radically modify the teaching evaluation system. This would involve multiple changes, one of the most meaningful of which would be adding elements that allow assessing the extent to which teaching incorporates and contributes to the mainstreaming of the sustainability approach to life in the face of current procedures that are built from technocratic and market logics.

Students may also show resistance to changes in the way of teaching and be reticent towards new ways in which the teacher does not assume their traditional role, which require the student to participate in the classroom and break with the predominant role today as passive students receiving content. Many students do not feel capable of assuming this new, more active role in the classroom. According to hooks (2021), this has to do with the fact that for a long time learners have been taught to see themselves as subjects without legitimacy or authority. A change of this nature in the way of teaching means that students will have to place responsibility where, in their eyes, it is least legitimate. Therefore, it may be necessary, before trying to get them involved in new teaching dynamics, to educate them about the process.

4.4. Making the classroom a democratic space connected to society

Transforming teaching means going beyond adopting critical perspectives and using alternative materials. It also requires changing the dynamics in the classroom, the way in which teachers behave and how they address students. It is essential to make the classroom a democratic space in which all people feel responsible for participating and contributing to learning. We must leave behind what Freire calls the "banking system of education", wherein he considers students as mere passive consumers, and create a learning community. This implies that all people in the classroom shoulder a shared responsibility. This does not mean that all people are equal in the classroom, but it does mean that they are all committed to a learning process (hooks, 2021).

This work is essential to build communities of recognition of knowledge, to overcome prejudices that are the basis of epistemic injustice, to encourage and acquire interdependent and critical learning that is better suited to reality.

To do this, it is important that teachers pay attention to who speaks, who does not speak and why; teaching students to listen to each other; that they show and exemplify their ability to listen, redirect attention to the voices of students and others, open a serious and respectful dialogue that allows for the creation of a common workspace. This necessarily means

modifying teacher-student power relations, breaking with the teacher-student hierarchy and building more horizontal relationships. Education must be understood as relational, based on dialogue, and it requires creating a "pedagogical link", which also means breaking with the individualistic vision of the neoliberal project (Giroux, Aguayo & Rivera-Vargas, 2022, p. 54). A transformative education implies welcoming collaborative and interactive learning that facilitates the integration of different types of knowledge and the diversity of perceptions about the complexity of reality and a holistic look at current challenges (Loorbach & Wittmayer, 2023).

In this shared space, teachers are also learners. In this way, the classroom becomes a place of learning for teachers, who "grow intellectually" thanks to the influence of the students. Of course, this has always happened, although it is hardly visible or recognised in the ways of measuring merit. Institutional evaluation systems firmly adhere to their individual logic and usually attribute merit to the individual-teacher in the generation of knowledge.

It is also necessary to be flexible with the established agenda. Usually, the teaching staff designs a plan for the semester beforehand, consisting of content, activities and assessment tests. Teachers try to follow this roadmap, and there is usually resistance to deviating from the plan, plus a fear of not having time to teach the entire syllabus. This often forces teachers to overlook "the atmosphere of the classroom" (hooks, 2021, p. 177), and not to assess whether students disengage or if they are willing to listen. Teachers subsequently are in a position where they do not introduce changes in the

dynamics to address student issues. The classroom is dynamic, it is never the same, it is always changing. This is especially true when a learning community is built and the class enters a state of flow.

As can be seen from the preceding discussion, a University aligned with the 2030 Agenda must be open to common problems, promote critical thinking and links with other spheres of society. Garcés and Herrera (2022) raise some interesting questions in this regard:

> What links does the University create or should create? Which ones does it create for itself and which ones does it fall into? Is it a club of privileged relationships or is it an environment of coexistence that can be considered as a social, cultural and educational space next to another and in continuity with those spaces? And what happens if we think about it and want to live it that way?... (p. 43)

These questions invite us to rethink the relationship between the University and society. Not only is there the classroom, but also the campus and the community (and communities) to which students belong.

In the context of the current systemic crisis, it is crucial to promote open universities which have joint relationships with movements and social actors, which establish dialogues and collective reflections with other knowledge and ways of knowing and encourage students to bring learning and knowledge to the classroom that they acquired in other spaces and in their own environment, throughout their life experience (Del Río Martínez & Celorio Díaz, 2018).

Earlier we stressed the importance of building situated and meaningful knowledge which facilitates the understanding and transformation of reality according to principles of social justice and the sustainability of life. To this end, it is essential to strengthen the ties and connections of the University with the street – social organisations, social movements or any other form of expression of social mobilisation.

We highlight three reasons here that illustrate the importance of this link to improving the understanding of reality and promoting social transformation. Firstly, its contribution to the processes of direct action in shaping and changing reality. Transforming reality requires a deep understanding of the processes, dynamics and structures that generate the main challenges we face. However, not all knowledge has the potential for social transformation. For this knowledge to be transformative in terms of social, ecological, global and feminist justice, it must necessarily be built collectively with other actors and social movements, as well as in articulation with other knowledge.

This co-production or collective generation of knowledge could be considered one of the necessary conditions to overcome the epistemological failure and injustice that, as analysed in the first part of this work, are at the root of the current systemic crisis.

Secondly, contribution this bond to the ability to interpret and narrate reality. To transform the established order, it is also essential to build both interpretative and narrative frameworks that are favourable to addressing the necessary changes. Explaining how the world works, how the model of global coexistence is set up, what norms, values and visions are dominant, what interests prevail in global decision-making processes are crucial elements not only to understanding the problems we face and guiding the responses, but also to rebuilding all these elements in a framework of common sense that is favourable to the interests of the majority of the population, respectful human rights and ensures the sustainability of life. The academy on its own does not have the capacity to generate all the knowledge or to build this story and share it with wider society. Broad uptake of such a story depends on the appropriation of knowledge by society, which necessarily requires that it be a participant in its construction.

Thirdly, a bond between university and society makes a contribution to the configuration of social and political debate.

Interpretive frameworks and narratives in favour of social transformation in terms of sustainability, feminism and global justice must permeate the collective imagination and rush onto the political stage, becoming the hegemonic player in what could be called "common sense".

The university-society bond can play a key role in confronting strategies that deny climate change, the feminist agenda and even the fundamental framework of human rights, among others, which in recent years have been gaining traction in the political and media spheres in many countries around the world. Additionally, this link may help in garnering support for the multiple transitions (ecological, feminist, democratic, socio-economic) that we must make.

Although, as explained, it is essential to strengthen the links between the university and society, the dynamics and logics currently predominant in the university do not push in this direction. Reversing this trend is remarkably complexity, to the extent that it necessarily requires addressing the epistemic and structural challenges that are addressed in the first two parts of this work, which contribute to generating and reproducing the distance between the University and society.

5. Reflections on the systemic crisis and the threats to the sustainability of life as an obligation and the 2030 Agenda as opportunity for the transformation of the University

This analysis leaves us facing different challenges related to repairing the damage from epistemological errors and injustices, with the need to promote structural measures aimed at overcoming the limits and determinants of the university system, and with the importance of rethinking teaching so that it is done with a firm commitment to the sustainability of life. We must respond to the needs of society as a whole against a systemic crisis that incorporates ecological and socio-political challenges, but also cognitive ones, which directly challenge universities, research groups and individual researchers. To conclude, the following pages are dedicated to pointing out some of these elements.

There are numerous and very diverse forms, strategies and paths through which universities can address epistemological challenges related to university structures policies, as well as those that most directly affect teaching. Given the nature of this work, in this final section we will focus on putting some of these options in dialogue with the framework of opportunity that the 2030 Agenda represents. It was stated in the introduction that

the approach to this agenda is understood in a context of bid for a transformative and comprehensive vision of the agenda, a reading that questions and seeks to displace many of the ideas incorporated in the visions of development and sustainability that have been hegemonic in recent decades and that, consequently, is committed to addressing a paradigmatic change (albeit unfinished).

Thus, from this perspective, an important element to frame and guide responses to these challenges, as well as to complement other transformative strategies and initiatives, is for universities to deploy action committed to this transformative reading of the 2030 Agenda. The University must follow a reading that, among other issues, implies a commitment to incorporate the perspective of the sustainability of life into teaching and research.

The Spanish University has already developed an initiative of enormous interest and potential related to the challenge of sustainability from a sustainable multidimensional perspective, but that has met with little success in its application.

As noted above, in 2005, the CRUE council approved the document "Guidelines for the incorporation of the Sustainability in the Curriculum", which was updated in 2011 and approved again in 2012. This initiative, as discussed above, was continued and expanded in the CRUE's commitment to the 2030 Agenda reached after passage.

Although it is a comprehensive agenda whose proposals, objectives and goals must be considered interpedently (Uria et al., 2017), target 4.7 warrants special attention, as it reflects one of the fundamental and most profound challenges that should lead to a review and rethinking of the role of university teaching as a whole. This goal proposes:

> ... by 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including through education for sustainable development; sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and non-violence, global citizenship and the appreciation of cultural diversity and the contribution of culture to sustainable development... (United Nations, 2015, p. 20)

It thus poses a cross-cutting challenge that affects the scope of teaching as a whole and links goal 4 with the rest of the Sustainable Development Goals (SDGs) of the 2030 Agenda. In other words, SDG 4, and in particular target 4.7 thereunder, requires the mainstreaming of sustainable development in all university educational actions.

The idea behind this proposal is that only through a profound change in the perceptions and capacities of global citizens in relation to the dimension, complexity and seriousness of the problems can global knowledge be generated and articulated

to address the transformations that the current polycrisis is demanding of us, and to promote responses to these problems from the perspective of the sustainability of life.

This approach refers to the responsibility of the University in equipping people with the skills and tools to critically interpret reality from a perspective that considers the ecological crisis and the layering of crises, regardless of the type of university education they are undertaking.

It would be, in view of a critical reading of the 2030 Agenda, a fundamental goal of the University that all people who participate in university education achieve a sufficient perspective and knowledge of reality regardless of their training or the skills they acquire. This should come in addition to the principles and values that the construction of a just and sustainable world demands.

Several elements may be useful in raising the fundamental aspects of teaching with a critical perspective suitable to the challenges of our society. For one, teaching must have a comprehensive character that contemplates all elements necessary to critically parse reality. That implies meeting the epistemological challenge of reversing the situation of epistemic failure injustice where we find ourselves now. The principles of SDG target 4.7 would be important to this project:

> ... education for sustainable development and sustainable lifestyles, human rights, gender equality, the promotion of a culture of peace and non-violence, global citizenship and the appreciation of cultural diversity and the contribution of culture to sustainable development... (United Nations, 2015, p.20).

Here we see some fundamental features to substantiate a multidimensional approach to sustainability that is embodied in the notion of the sustainability of life. To these features we should of course add unincorporated studies and knowledge (which, let us recall, may be generated outside of formal studies), especially those from ecofeminist and decolonial schools of thought.

On the other hand, and in concert with the need to develop keys to the critical interpretation of reality, We are witnessing the need for a multi-, trans- and interdisciplinary education that allows us to understand the complexity and interdependence of reality, regardless of the disciplines in which the teaching is imparted.

In short, it would be a matter of committing to a university education that offers keys to understanding the complexity of the world and its wholeness, as well as the inter- and eco-dependence of reality (Celorio & del Río, 2018; Sánchez, 2018; SDSN Australia/Pacific, 2017). All of these are fundamental keys to strengthening the commitment to the sustainability of life[18].

However, the incorporation of the sustainability of life perspective in teaching from an integral logic faces numerous and profound obstacles that have been addressed previously. They are caused in large part by the predominance of the logics of excellence and productivism, accentuated by the commercial drift in Spanish universities, as well as by the marked disciplinary compartmentalisation in which the university knowledge system is structured. These are elements that converge and cause, as the ACUP points out, that "higher education institutions are obliged to respond to a growing concern for competitiveness, trying to compete in global rankings based on indicators that do not take into account the necessary social impact of university systems" (ACUP, 2017, p. 4). Rankings are not natural phenomena and alternative proposals may be offered against them, as is the case in other areas. These are also phenomena, as has been shown, which give rise to negative effects19 that limit the performative and transformative capacity of universities, which is especially necessary in the current context of civilisational crisis.

But this is not a challenge exclusively for teaching activity, as it also fully affects research. Knowledge creation in the university is also undermined by the structural and epistemological limits analysed here and that result in the aforementioned effects.

For the field of research, the 2030 Agenda is also a context for opportunity insofar as it is a call to overcome the compartmentalised logic that predominates in the generation of knowledge, even though it must necessarily be inter- and transdisciplinary in order to understand an increasingly complex reality.

Thus, the University is called upon to promote spaces and options for the generation of inter- and transdisciplinary knowledge (SDSN Australia/Pacific, 2017). Spaces and options that, succinctly, promote and foster studies and research on sustainability with the necessary force.

The idea of the cross-border construction of knowledge is the root of an important concept to advance research committed to a fairer and more sustainable world, while especially challenging universities. An important part of scientific knowledge is generated in the University and yet the institution is usually distant from other actors in society that also construct knowledge, although this rarely permeates the academic field. The 2030 Agenda, however, makes us face complex, deep and structural challenges, which call for collective, multilevel and multi-actor action not only in implementing responses, but also in the generation of knowledge necessary to understand our reality and ponder possible alternatives. Thus, in response to these challenges, it is the responsibility of the University to address processes of

knowledge generation with a variety of actors other than university students (Surasky, 2018).

This matter is not only tied to the necessary multi- and interdisciplinary nature of the knowledge but, as already mentioned, to the transdisciplinarity of knowledge as well and the essential link between the University and society as a necessary element to unravel the complexity of social, political, environmental and economic challenges (SDSN Australia/Pacific2017, p. 18).

It is necessary, in short, to accept the commitment to a more deliberative and democratic society based on the nexus of politics, society and knowledge and knowledge (Torgerson, 1996), but this will not be possible without a transformation of the university based on an outward-facing logic (Subirats, 1989) that explicitly aims to overcome the epistemic injustices that are regularly committed in the production of scientific knowledge, by ignoring the value of the knowledge generated outside of institutionalised processes.

Similarly, there is heightened importance for the ideas of networking, of generating research with other agents and research centres of higher education, with spaces and organisations from civil society and the private sector. In addition, it is of enormous importance to co-design and co-produce knowledge alongside the people and groups linked to political and organisational decisions, with the capacity to transform the world (SDSN Australia/Pacific, 2017, p. 18) in a way that favours the sustainability of life. It is a matter of emphasising the

importance of joint work between theory and praxis, of putting both academic knowledge and practice in dialogue with social, political and institutional practice, as well as among different knowledges which recognise and complement each other in the search for solutions to the problems of global society.

An aspect of enormous relevance to advance in the construction of a more just, equitable and sustainable society is the link between the University and its actors with other agents of society based on the construction of strategic alliances. This is a crucial part of the commitment to an expanded and renewed university extension.

This issue, although fundamental for teaching and research transcends those fields and challenges the whole of university action, as well as its policies and extension actions.

As Herrero and Jerez (2022) point out, in order to achieve an effective view and practices in favour of sustainability, it is important to promote the coherence of sustainability activities in university life. That is, "in their extension and transfer tasks, in participatory decision-making to adopt actions together with a university community destined to look at itself in the mirror of sustainability" (Herrero & Jerez, 2022, p. 366). Thus, from this point of view, university extension should lead the university actors to overcome the current model of relationship of markedly one-time, instrumental and extractive interactions

that are commodified and excessively defined by response to demands and exchange of knowledge. In the face of this, the link with society in its different expressions requires a more strategic, more horizontal, longer-term and articulated view based on collaborative dynamics.

This argument is linked to a critical look at the idea of "transfer", to the extent that it is a unidirectional approach to the link between the University and society or institutions, when we should be speaking of the co-production of knowledge.

All this is a key element in curbing the commodification drift that seems to be dragging universities into a disconnect from society.

It is critical, as Celorio and del Río (2018) propose, to reinforce this dialogue between the University and society as a central and far-reaching strategy with the goal of effectively incorporating the commitment to the sustainability of life. They stress the importance and need for dialogue between social groups and organisations and the university, dialogue that is currently "scarce, one-off and peripheral"... In view of this, they consider that:

> ... It is necessary to build bridges between both actors and bind them in collaborative work that is attentive not only to the margins of university activity but also to the core of teaching and research action,

> and to the progressive definition of a relevant curriculum of emancipatory projection... (Celorio & del Río, 2018, pp. 13-14)

This approach is fundamental for the articulation of collective action aimed at the sustainability of life and is favoured in the context of institutional opportunity made possible by the 2030 Agenda. That said, here the University finds one of its major challenges in that it implies addressing at least three elements that represent a break from and questioning of the epistemological, structural, and teaching practice dimensions that have been addressed in this work: the first of them points to the breaking of the isolation that often characterises the University. To do this, it is necessary to make its borders more porous than they currently are. The second, which directly challenges the assorted individuals that make up the university community, requires greater doses of rebellion against the limits imposed by structural determinants and abandoning, as far as possible, a certain comfort zone offered by the university space, to interweave with other actors, to enrich and complement each other. The third, and most complex, involves reversing various trends that have become entrenched in the functioning of the University: technocracy, excessive bureaucracy, commodification and a productivist logic in academic careers and in the way of conceiving the University.

When considering all of the above, challenges arise that come exclusively from the University and its agents regarding decision-making in the university space. Other challenges, however, transcend the decision-making space of universities, demanding public support and political transformations (in a broad sense, linked to the fields of of policy, polity and politics), a fact which does not exclude the necessary effort from the University and the university community as a whole.

Thus, the need for comprehensive action in conjunction with diverse actors is confirmed, which is highly present in many of the challenges faced by the University, some of which require solid leadership of the University, while others demand a role of adding dynamism or vindication.

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7. Methodological appendix

The methodology used in the research is qualitative and based both on the work of bibliographic review and documentary analysis, as well as on the consultation of key actors (teachers and students) for the collection and contrast of information through discussion groups.

In the case of the teaching staff, a discussion and contrast group was formed according to criteria to foster gender equality, teaching experience, critical perspective, experience in mainstreaming and multidisciplinary balance. The group was made up of the following people:

– **Alejandra Boni**, professor at the Universitat Politècnica de València.

– **Ariel Jerez**, professor of Political Science at the Complutense University of Madrid, delegate of the Dean for Sustainability and Innovation.

– **Iratxe Amiano**, professor in the Department of Financial Economics at the University of the Basque Country.

– **Itziar Ruíz-Giménez**, Associate Professor of International Relations in the Department of Political Science and International Relations of the Autonomous University of Madrid.

– **María Gema Quintero Lima**, Vice-Dean of Equality, Diversity and Sustainability at the Faculty of Social and Legal Sciences, Carlos III University of Madrid.

– **Mateo Aguado Caso**, PhD in Ecology, researcher and lecturer at the Laboratory of Socio-Ecosystems, Department of Ecology, Autonomous University of Madrid.

– **Paula de Dios**, SUPERA Project Office - Supporting the Promotion of Equality in Research and Academia.

– **Víctor Alonso Rocafort**, professor of Political Science at the Complutense University of Madrid.

This group was consulted at two key moments in the research process. At the beginning of the process, the corresponding documentatioin was sent and a meeting was held with the aim of contrasting the approach and structure of the research and collect relevant information. The dynamics of the meeting consisted of establishing a dialogue based on the experiences, reflections and ideas of the group members that, in order to structure the discussion, was articulated around guiding questions built on four main pillars:

Pillar 1. Research approach:

– What does the research suggestion mean to you?

– Do you consider it necessary to incorporate elements of improvement or suitability in the proposal?

Pillar 2. Plane of knowledge:

– What do you consider to be the main challenges to overcome current epistemological or theoretical limits?

– Where do you consider the main resistances to be found?

Pillar 3. Structural and institutional level:

– Where do you think the main limitations lie in incorporating critical visions favourable to the sustainability of life in university teaching? How do these limitations manifest?

– Do you think it is possible to develop collective strategic approaches to overcome these limitations or, given the current conditions, are they reduced to the individual level?

Pillar 4. Teaching:

– Do you find it difficult to incorporate approaches or content related to the sustainability of life in your teaching practice?

– Could you identify teaching practices of interest to incorporate approaches and content related to the sustainability of life, the feminist approach and the decolonial approach?

The second moment of consultation with the group of experts was carried out at the end of the research work, once the first draft of the research report had been prepared. This report was provided by email to the group members with the aim of collecting their assessment of the main results obtained, contributions and comments that were subsequently analysed and incorporated into the report.

In relation to the students, the process was also articulated through two phases of consultation, at the beginning and end of the research process, although, in this case, the composition of both groups was different. Thus, at the beginning of the process, a discussion group was held in which six students participated, in order to collect information on their perceptions, points of view and experiences in relation to the incorporation of the sustainability of life approach in university teaching and on the extent to which the university provides them with adequate tools to understand and act on reality. Subsequently, at the end of the research process, a participatory workshop was held to contrast the results with a group of twenty students. The dynamics of the workshop consisted of working in groups of five people around the three pillars of analysis that structure the research:

Pillar 1. Plane of knowledge:

– We are witnessing a crisis of civilisation greatly influenced by the eco-social crisis (climate emergency, exceeding the limits of the earth system, etc.). Do you think that in the world there is sufficient and adequate scientific knowledge to respond to the challenges and overcome the crisis?

– If so, who has it and where is that knowledge found? Why then is it not applied and the problems solved?

– If not, why and how can this necessary knowledge be generated?

Pillar 2. Structural and institutional level:

– Do you think that the University is currently an actor of social and political transformation or that, on the contrary, it contributes more to the reproduction of reality? Do you think it should be a transformative force?

– If not, why?

– If so, what are the main limitations that the University faces in playing this role for transformation, which manages to incorporate the perspective of the sustainability of life in all its action (teaching, research and transfer)?

Pillar 3. Teaching:

– How are issues of "sustainability of life" addressed in teaching? Are these issues incorporated into the curriculum? Are they considered in the classroom? How? If not, how do you think they could be addressed?

– What do you consider to be the role of university teachers in the context of the current systemic crisis?

– About how the classroom works: Do you find it useful to attend classes? What motivates you and what demotivates you? What are the predominant dynamics in the classroom like? What type of relationship predominates between students and teachers? And among the students? How do you usually participate in the classroom? How do you rate the practical classes? Do you find them useful? Why? What limitations do you find to actively participate in the classroom? What would you change?

After the group work, the responses of the different groups were discussed and contrasted with the results of the research work.

Notes.

1. Contrary to what is usually proposed, the 2030 Agenda, rather than a consensus on development, responds to an amalgamation of visions that allow for very different interpretations that can give rise to readings and implementation processes with highly divergent degrees of transformative ambition. In practice, it is possible to identify readings of a markedly continual nature with respect to the situation prior to the approval of the 2030 Agenda, more instrumental and possibilistic readings, and ambitious readings in terms of the transformative perspectives of the agenda. These readings can be explored in greater depth in Martínez and Martínez (2016) and Martínez (2020).

2. We must clarify that despite referring to university studies and university research and teaching as a whole, the training and professional trajectory of the research team mean that research has been approached from a perspective closer to the social sciences, which may limit its scope. With regard to the structural dimension of the university, the research has focused on the analysis of the Spanish case.

3. The sustainability approach to life is based on the recognition that human beings are eco-dependent, dependent on nature, and interdependent on each other and need to be cared for. The sustainability of life is thus understood as the set of processes that, in interaction with nature, allow the reproduction of existence in dignified conditions and make possible a life worth living, without jeopardising the physical limits of the planet. It incorporates, in this way, an element of subjectivity and distances itself from Western universalist visions, understanding that people and political communities must freely define what they consider a dignified life (Herrero, 2022 and Martínez, 2021).

4. Own translation.

5. Dare to know!

6. Currently, the General Secretariat of Universities, of the Ministry of Universities, recognises 190 areas of knowledge. The list of areas of knowledge can be consulted at the following link: **universidades.gob.es/wp-content/**uploads/2022/10/clasifi

7. This issue is addressed in the preamble of the LOSU and is also included in articles 11 (multi- and interdisciplinarity in research), 13 (recognition of multi- and interdisciplinarity in the evaluation of research activity) and 40 (cooperation between university centres and structures).

8. The document can be found at the following link: **crue.org/wp-content/uploads/2020/02/Directrices_Sosteniblidad_Crue2012.pdf**

9. The document of this commitment signed by the CRUE can be found at the following link: **crue. org/wp-content/uploads/2021/11/CRUE-Universidades-Espanolas.-Posicionamiento-Agenda-2030.pdf**

10. See in this regard the Preamble and Articles 12.1, 12.10, 12.11 and 56.3.c of the LOSU.

11. Investment in R+D in Spain went from 1.36% of GDP in 2010 to 1.19% in 2016, then to 1.25% in 2019, (compared to the EU27 average of 2.23%). Since then, the data have been notably distorted by the fall in GDP in 2020 as a result of the crisis caused by Covid-19, and by the exceptional increase in investment in R+D in 2021 caused by the influx of the European *Next Generation EU* funds (Basque Institute of Statistics, 2022).

12. An example of this is the imbalance between the calls for six-year periods for the recognition of research and those for the recognition of six-year transfer periods.

13. More information about DORA can be found at the following link: **https://sfdora.org/**

14. The list of signatories is available at the following link: **https://sfdora.org/signers/**

15. The Conference of Rectors of Spanish Universities (CRUE) and ANECA are part of this initiative, as well as several regional agencies and numerous Spanish universities on an individual basis.

16. The title of this subsection has been taken from Herrero (2022).

17. According to the authors, this term is similar to interaction, but it tries to emphasise the importance of the relationship rather than the nature of the elements between which that relationship is established.

18. It should be noted that Spanish universities, at least at the regulatory level, are making significant progress that allow us to think of a future in which it will play a more transformative role in relation to the challenges posed by the current eco-social crisis. Thus, we observe some advances that can contribute to overcoming some of the structural limitations pointed out in this work. This is the case of some of the advances included in the science law (Act 17/2022), the law on coexistence (Act 3/2022) or in the Royal Decree establishing the organisation of university education and the procedure for ensuring its quality (Royal Decree 822/2021). The last of these reminds us that "a society in permanent change demands from the University an increasingly rapid and flexible response to the training needs of professionals in accordance with these changes. At the same time, it demands that those professionals who have emerged from universities be able to lead these transformations in order to collectively build a society that is open to change, economically and environmentally sustainable, technologically advanced, socially equitable, without any kind of discrimination based on gender, national or ethnic origin, age, ideology, religion or beliefs, illness, social class, or any other personal or social condition or circumstance, and clearly aligned with the Sustainable Development Goals (SDGs). At the same time, societies undergoing change require new scientific, technological, humanistic and artistic knowledge that is transferred to the students during the teaching and learning process, allowing them to obtain a comprehensive education".

19. In this work, the "hegemonising, packaging, homogenising and centrifugal" effects have been identified and characterised as the main and most limiting effects for the necessary transformations.

Economists
Without
Borders