

Introduction

This is the positioning strategy of CNRS Humanities & Social Sciences aimed at effectively supporting basic research into individuals and human societies and bolstering the Institute's capacity to find the right responses to issues affecting both.

Since 2010, CNRS Humanities and Social Sciences - formerly the Institute for Humanities and Social Sciences - has been carrying out on an ongoing process to establish its scientific research priorities.

Thought on the subject has focused on three main areas - disciplinary fields, methods and research objects - and aimed, then as now, to identify issues deemed priorities by the Institute. This colours and defines many of the choices involved. These include:

- posts for researchers' recruitment competitions,
- profiles for CNRS junior professorships,
- the Institute's support for PhD students and post-doctoral fellows and/or support that can benefit its communities via internal CNRS calls for projects (AAP),
- its decisions on national and international networks,
- the SOSI (Open Monitoring of Societies and their Interactions) support initiatives it sets up,
- its involvement in research programmes and scientific operations in partnership with a given institution,
- its decisions on research support professions and so forth.

This long-term effort in terms of support and leadership has produced a structuring effect that effectively takes account of the Institute's budgetary and human resources capacities.

This study process and thought has been a key part of the Institute's management team's work, aiming to:

- a) support research which would not be possible in French higher education and research (ESR) without the CNRS or would be difficult to develop to the highest level;
- b) spotlight subjects that are highly important both as basic research objects and as societal issues for which it seems crucial to effectively position the humanities and social sciences.

This ongoing thought process has focused on emerging research issues and on the core professions and disciplinary excellence considered absolutely essential that need to be preserved to feed into scientific approaches in the humanities and social sciences.

In 2021 this thought process began to undergo several changes. It was firstly based on mapping the research fields, methods and objects for which CNRS Humanities & Social Sciences combines its significant research strengths in its laboratories, service units, research infrastructures, networks, approaches to innovation, individual or collective chairs and research programmes.

This work is presented on the CNRS [Humanities and Social Sciences Research Portal](#) which is continually updated and revised annually.

The aim of this thought process is to create the best possible conditions for research into issues requiring multidisciplinary approaches and methods to be developed together or even integrated without neglecting our core professional excellence. Within the French higher education system, the CNRS can be considered a prime - though not exclusive - stakeholder for this approach which aims to respond to research challenges that cannot be effectively dealt with through the prism of a single discipline or method.

Finally, the Institute wished to give this thought process a forward-looking dimension through an ongoing dialogue with our research communities, aimed at identifying new research issues, and organising these communities to help them put forward proposals for large-scale research programmes. This is why the Institute is organising discussion sessions with laboratories, getting networks involved, setting up and funding working groups in support of this forward-looking outlook. The target has been set to finalise a roadmap for the humanities and social sciences by spring 2025.

CNRS Humanities and Social Sciences is positioning itself in the following fields, methods and themes which are key elements of its scientific strategy.

(June 2024)

Subject areas

Archaeology

Archaeology is the study of past societies, from the appearance of hominids to the sub-contemporary period through the analysis of material remains. This historical discipline is currently undergoing a major process of epistemological renewal and involves a highly marked level of interdisciplinarity particularly with the life sciences and sciences of matter.

Archaeology contributes to the renewal of historical knowledge particularly for periods or societies for which written documentation is non-existent or very much incomplete. It also similarly renews knowledge for more contemporary periods and helps shift focus from the elites who produced the written word to the general population while highlighting how the historical narrative has been manipulated and deliberate forms of information concealment. Archaeology also helps enhance our understanding of modern and contemporary societies in terms of technical changes, urban or industrial transformations, knowledge of daily life or conflicts and disappearances.

The discipline is constantly expanding its range of subjects. Sedimentation and patrimonialisation continuously produce archaeological remains but these 'soil archives' are subject to considerable erosion because of regional planning, major infrastructure works, trafficking, looting and deliberate destructive acts.

The increasingly interdisciplinary sciences of archaeology include archaeology and art history along with all the sciences that study materials (physics, chemistry), the palaeoenvironment (palynology, anthracology, archaeobotany, archaeozoology, geoarchaeology), human and animal genomes, and so forth. As a result, such work involves many CoNRS sections (31, 32, 33, 15, 19 in particular), a growing number of Institutes (CNRS Humanities & Social Sciences, CNRS Ecology & Environment, CNRS Chemistry, CNRS Earth and Space), and are linked and developed in conjunction with several co-managed laboratories abroad. Archaeologists are also reinforcing dialogues with the other humanities and social sciences fields like history, ethnology, sociology and law particularly as regards the issue of heritage and trafficking of antiquities.

Archaeological sciences have many supervisory authorities (the French Ministries of Culture, National Education and Higher Education and Research) and there are numerous regional or national operators such as the National Institute of Preventive Archaeological Research (INRAP). In this context, the CNRS evidently plays a particularly important role in programmed archaeology in France and indeed on all the world's continents. Reinvestment in national archaeology is required along with support for the development of research in Asia, the Arctic and sub-Arctic regions, sub-Saharan Africa and Oceania. The CNRS strongly supports interdisciplinarity and has gauged the importance of the current challenges facing archaeology (management of masses of data and AI, 3D data, detection procedures) in what is a complex financial context with the costs of archaeology, on-site data acquisition, analysis of artefacts and restoration/conservation constantly rising. The CNRS also encourages the creation of major analysis infrastructures like New Aglaé or IPANEMA and the international networking these carry out.

Archaeology as a social science contributes to major societal debates by providing in-depth knowledge of phenomena over time. This includes climatic variations and how human societies adapt to these, coastal development, resource and soil management, pandemic management, conflicts, the expression of social and gender differences, pollution, management of built and artistic heritage or mass violence. It also takes part in the development of heritage sciences as its involvement in the Notre-Dame de Paris project in recent years has demonstrated.

Anthropology

The aim of this discipline is to study forms of social and cultural otherness through immersion in long and/or prolonged and repeated fieldwork requiring its practitioners to master the language(s) spoken by the people they are studying. This research primarily involves gathering knowledge from emic categories (the informants) and also detailed observations of ongoing phenomena. The traditional fields of ethnology/anthropology have been undergoing profound changes for many years now. The discipline no longer simply aims to produce exhaustive monographs on a population or a region of the world. Today's anthropologists concentrate on the study of objects, themes and contemporary issues that are often networked and interconnected while seeking to understand their impact on the groups, populations and individuals being studied. Anthropology has always been resolutely interdisciplinary and works in a constant dialogue with the other humanities and social sciences (history, linguistics, economics, territorial sciences, sociology, literature, art, etc.) because its researchers aim to understand all dimensions of the human being in society. Similarly, many anthropologists engage in dialogue with other sciences (medicine, biology, computer science, mathematics, physics, etc.) and work on major contemporary issues. The latter include the environmental crisis, genetic engineering, ageing, robotics, bio-materials, pharmacopoeia, human-animal relations and so forth.

Anthropology is among the disciplines that are the most spontaneously open to shared science methodologies with many recent projects demonstrating the value of co-constructing research objects. Current thought and ideas about the forms and devices of research writing (films, documentaries, photographs, graphic novels, sound documentaries, collaborations with the performing arts, etc.) are contributing to how the results of research are returned to the population groups studied. Such advances have also enabled anthropologists to densify their expressed ideas and convey the sensitive and emotional aspects involved that are sometimes harder to put across using traditional research writing techniques.

Anthropology has been an integral part of the strategic positioning of CNRS Humanities and Social Sciences for a number of years but the discipline remains rather fragile in the French higher education and research landscape and also very 'CNRS-dependent'. There are few

university courses on the subject and few dedicated laboratories. Joint research units (UMRs) are almost exclusively concentrated in the Paris region and at Aix-Marseille and the dispersion of researchers and academics is also apparent. CNRS Humanities & Social Sciences will continue to pay particular attention to this discipline through support for its actions, research and dynamics, of course within the limits of our resources. One example of this support is the [2022-2024 'Sharing Anthropology'](#) focus programme which has helped raise the discipline's profile through dedicated communication resources, specific events and so on.

Classical studies and their reception

This field has a long history in France, as is the case in the English-speaking world and in Germany. The term '*sciences de l'Antiquité*' is widely used in France as is 'classical studies' but in fact neither term is fully satisfactory. These expressions cover literary studies in Greek and Latin, the 'classical' archaeology of Greece and Rome, other archaeology studying Egypt, the Near and Middle East, Etruscans, Carthage, Celts, etc., art history, philology and philosophy. The current dynamics of classical studies research at the CNRS involves a set of disciplines, themes and issues that are evolving over time (on the scale of almost a century and a half) and are constantly underpinned by one major issue - determining their spatial/areal and temporal perimeter and, correlatively, their object and methods. Thus, within the Greco-Roman world it gradually became clear that the divide between the Greek and Roman worlds could no longer be maintained. As early as the Archaic period, Rome was in contact with Greek cities - particularly Campania, Cumae, Pithecussia and Naples - and the cities of Magna Graecia like Taranto and Metapontum; in the 4th century BC, Rome became part of the Hellenistic kingdoms and eventually integrated the whole Greek world into the Roman Empire. As a result, the eastern part of the Empire straddled both Roman and Greek history. Also, the idea gradually took hold that studies could not be confined to the sciences of the Greco-Roman world alone or of the Mediterranean even in its enlarged form. This development has major epistemological implications and is reflected currently at the CNRS in a shift involving the following three aspects:

- Spatial boundaries are receding. Today, the dividing line being challenged here in France is the border distinguishing work on Eastern areas (China, Korea, Japan) and work on areas from the more established classical sciences (the Greco-Roman world, the Mediterranean basin and the Middle East).
- Temporal boundaries are also evolving. If the reception of the ancient corpus, its translations, commentaries, uses and revisions are included then the field of classical studies potentially covers work on later periods. For example, in philosophy this particularly involves the Middle Ages and the Renaissance. The field therefore extends beyond the 'classical sciences' as such. From a temporal standpoint, the same applies 'upstream'. According to the dates when writing appeared, the civilisations of Egypt and Mesopotamia tend to be considered as 'ancient' (and therefore 'historical') while contemporary civilisations like the Western Europe of the megaliths for example are deemed to be 'protohistoric'. It thus seems more appropriate to consider all these geographical areas in the same timeframe namely from the first manifestations of strong power structures of the state type. These are documented in writing in some cases but are also represented by megalithic constructions in others or in the symbolism of power (steles, etc.) from the beginning of the Bronze Age.
- Disciplinary boundaries are also being challenged. Classical studies are moving away from a discipline-based approach to mix in language specialities,

history and geohistory, archaeology, archaeometry, cultural anthropology and so forth. The example of historians like Paul Veyne in France or Moses Finley in the United Kingdom show that these figures play a driving role in bringing disciplines closer together.

- Finally, we are dealing with a field which, by constantly redefining its spatio-temporal boundaries and hence its content, methods and tools, is the ideal place for forming a historicised and areal reflexive view of what a society may consider to be its 'classical culture', the means of knowing and transmitting it, and therefore also a kind of mirror for thinking about its past, present and future identity and its relationship to 'other' cultures. In short, classical studies act as a mirror for societies.

Methods

Area studies, comparative and transnational approaches

CNRS Humanities & Social Sciences wishes to consolidate approaches that consider studies rooted in specific spaces and contexts to be of crucial importance. These studies were once confined to non-Western or non-European areas but must now encompass all societies - from ancient times to the most contemporary periods. Local integration is a central issue in such approaches and means the phenomena associated with it (localisation, delocalisation, relocalisation) can be effectively examined. However, the areal dimension approach also involves questioning the construction of these areas and the ensuing discussions and conflicts which such areas are subject to.

Unlike methodological nationalism, the areal approach takes movements and transfers from one area or era to another into account without resorting to globalising and standardising studies. Areal approaches need to be conceived of in their full complexity. This requires researchers to take an interest in obstacles and enclosures as well as networks and interactions; to focus on areas of contact and border zones as well as neglected territories and margins; to study openings, globalisation and new globalities as well as phenomena of retraction and withdrawal; to study complementarities and cooperation as well as social and territorial conflicts and finally to highlight obstacles and brakes on progress as well as dynamics.

Areal approaches enable researchers to vary scales of analysis and question the spatialisation of phenomena. In this way, conditions of life, thought and action - which may be shared or the subject of multiple conflicts - can be effectively examined. This type of approach focuses attention on the social, economic, political and legal dimensions of territorial phenomena. Other factors that are important here include the invention of traditions, the role played by the cultural dimension, populations' representations of their own space and the spaces of others, questions of mediation between societies (translations, exchanges, etc.), memory issues or comparative and transnational approaches to law. The linguistic vector is also essential and involves taking plurilingualism into account with oral, written, audiovisual and digital transmissions also studied in this context.

The importance accorded to areal approaches in conjunction with other academic partners means research communities can be identified, structured and funded. It also leads to the mobilisation of significant resources by CNRS Humanities & Social Sciences through its specialised UMRs, overseas laboratories, networks, various international cooperation tools, international PhD student contracts and support for incoming and outgoing mobility. Other significant factors linked to these approaches include the importance attached to the data

produced and the knowledge generated in terms of disseminating knowledge and issues (in books, journals, on dedicated websites, via less academic forms of communication), documentary resources or their development through documentation centres, digitisation campaigns, excavation tools, and so on. Our policy for recruiting researchers is also influenced by these areal approaches.

CNRS Humanities and Social Sciences would like to deepen these approaches by working along several lines: using these approaches in all the Institute's disciplines; emphasising certain areal approaches (transatlantic spaces and circulations, Asia-Pacific, Antilles-Caribbean, French overseas territories, empires, the French-, Portuguese- and Spanish-speaking worlds); creating interdisciplinary research networks linked to areal approaches; working on the links between UMRs and laboratories in other countries; making a priority of the accessibility and availability of print and digital humanities and social sciences documentation in a variety of languages in conjunction with other institutions; working to maintain scientific skills in disadvantaged areas; collaborating with the Digital Humanities to promote the development of digital tools in currently less represented languages, particularly non-Latin languages. Stressing the importance of areal studies will enable us to develop strong research dynamics in Africa in accordance with the [CNRS's multi-year cooperation roadmap with Africa](#).

Shared science

The emphasis placed on shared sciences by CNRS Humanities & Social Sciences means the Institute is firstly proposing to support methodological thought and study in a context where participative sciences - sciences with or for society - are particularly valued contemporary research approaches which nonetheless bring up lively methodological questions. The aim here is to develop rigorous and appropriate survey research methods and protocols to involve the public under observation in the knowledge acquisition process concerning them. Another aim is for knowledge about a third-party object in the framework of a research project to be jointly produced with stakeholders in society (increasingly referred to as a 'third research sector').¹

The notion of shared sciences also covers the importance of helping disseminate research results and in some cases of informing the decision-making process, providing expertise and the ways results can be made available for a non-academic audience (which may actually have 'commissioned' such research). The concept therefore brings up questions about the role of everyone involved at every stage in the development of a research project. It also leads to questions about the forms of dissemination, the professions and skill sets required (communication, mediation, intellectual property law, etc.). Finally, the concept of shared sciences is now partly linked to the management of the data produced during the research process.

CNRS Humanities & Social Sciences aims to encourage research that fits with this kind of co-construction and also to open up space for thought about these mechanisms, the expectations and limits involved, any misunderstandings that might arise on both sides, data protection issues, open science and so on. This comes at a time when European calls for projects are encouraging researchers to work along these lines.

Conceptualisation and formalisation, experimentation, qualitative and quantitative data analysis

CNRS Humanities and Social Sciences has a strong and renewed ambition involving the ongoing development of approaches based on conceptualisation and formalisation,

¹ The term 'third sector of research' covers the non-profit sector (associations, trade unions, local authorities), the not-for-profit sector (the social economy, professional groups) and small-scale for-profit organisations (the self-employed including artists, agricultural or craft groups). A [Third Sector Research Conference](#) took place in Rennes on November 30th 2020.

quantification and data analysis, mixed methods (quali-quant) and also experimental approaches in the humanities and social sciences. Such approaches are particularly used in economics, linguistics, geography and archaeology because of recruitments and specific calls for projects while large-scale statistical surveys are familiar tools in sociology, political science and history. These fields have also worked on the renewal of quantitative approaches to the extent that they now favour mixed approaches combining qualitative methods, case studies and massive data analysis. From a methodological standpoint, this development is occurring closer to the interface with other CNRS disciplines like mathematics, ecology and environment, biology, earth and universe sciences or computer sciences.

Currently a large proportion of our communities have become used to digital technology in cultural terms. This means particular support is required for emerging projects (and the colleagues and units that lead them) aiming to develop an enhanced interweaving of approaches and methods based on conceptualisation and formalisation, qualitative and quantitative analyses of data, experimentation, massive data and using artificial intelligence to process that data. Firstly, the development of experimental approaches in the humanities and social sciences - particularly at the interfaces with neuroscience and cognitive science – has led to a considerable amount of data being produced as a result of online and field experiments. The development of experimental techniques for testing hypotheses and behavioural models has seen a spectacular boom in recent decades and provided new qualitative and quantitative data. However, it is still important to encourage the development of experimental designs based on a conceptual, even formalised, framework to clarify the hypotheses being tested and conditions for participants. The development of experimental data or data deriving from massive data also requires attention to be paid to the quality and richness of this data and the consistency of the corpus that are processed. Finally, the replicability and reproducibility/robustness of results are core factors of this approach in the framework of the vast open science movement.

Digital data occupies a well-identified central place in both the social sciences and the humanities currently. CNRS Humanities & Social Sciences supports specialised teams and the Progedo and Huma-Num research infrastructures in implementing tools that are adapted to processing heterogeneous corpora and data. The Institute also supports many other teams heavily involved in the digital humanities through the training of researchers and engineers and the support of specific projects aimed at developing new processing tools.

Progress still needs to be made on shared tools and methods combined with the dissemination, sustainability and interoperability of results. The aim is to produce or adopt shared norms and standards at European and international levels and also locally for digital tools and systems that emerge on research sites.

Themes

Health

Health is a key core issue for CNRS Humanities and Social Sciences, a position resulting from the long history of work on and involvement in health issues by all fields of the humanities and social sciences - sociology, political science, history, philosophy, geography, economics, anthropology, psychology and psycho-linguistics, law and literature. These different disciplines work on a broad range of questions linked to or revealed by health issues. The latter include social, racial and gender inequalities, health policies and their effects, global health and the perpetuation of international inequalities, the ethics of care, health data and its uses, and so forth. This explains the importance of the subject for CNRS Humanities and Social Sciences. The Institute has the right cross-disciplinary forces to adopt an approach that is completely

original among research organisations, particularly through its many joint research units and therefore several of their researchers working on these issues.

The Institute's long-standing investment in various health research issues has been reinforced by an unprecedented interest in themes that have taken on particular salience during the crises of recent years such as the Covid-19 epidemic or, more broadly, environmental and geopolitical crises that have had a major impact on health. In response, CNRS Humanities and Social Sciences has launched a number of new initiatives, particularly in interaction with existing scientific dynamics on the Condorcet Campus. Since 2020, the Institute has been developing the ['SHS Santé' platform](#) with the support of specific funding from the French Ministry of Higher Education and Research. The platform's aim is to federate and structure research on health issues at the Condorcet Campus. CNRS Humanities and Social Sciences also leads the research projects involved in the ['From the World Before to the World After – MAMA' programme](#).

Among these emerging health issues, CNRS Humanities and Social Sciences has been particularly active in environmental health. Other CNRS Institutes also work in this field but it is essential for the humanities and social sciences to contribute all their research capacities to remain a core stakeholder in work on such issues. It is also essential for the very social dimensions of these questions - like the role of work and occupational exposure in environmental health or social inequalities - to be given deserved importance. This has been the case notably thanks to the SOSI (Open Monitoring of Societies and their Interactions) projects, some of which focus on environmental and occupational health. The Institute has structured a series of initiatives that take a long-term approach to highlighting the impact of certain types of pollution in the environment or in the workplace.

The planet's habitability

The idea that planet Earth could become unliveable for humans and societies has become an increasingly realistic prospect. In reaction, our humanities and social sciences research communities have taken an ever increasing interest in the issues brought up by global environmental change, particularly as few places or areas of life are untouched by the consequences of these changes. The urgent need for action on the environment requires far-reaching changes in development models, lifestyles, ways of consuming and producing and our relationship with other living beings. The humanities and social sciences can make an essential contribution to enhancing our understanding of the way these issues are perceived, described and taken into account (or not) and to identify the obstacles and stumbling blocks preventing the necessary transformations. These disciplines are also essential for the construction of scenarios and possible futures because they have a particular sensitivity to the forms of vulnerability of individuals and groups, as well as to inequalities and the way they structure, and are structured by, current and future developments. The primary focus is on just transitions, namely the need for contemporary societies to face the consequences of climate change and broader environmental change by attempting to prevent and repair what can be repaired, by adapting, through the development of economies that are sustainable from an environmental standpoint but also in social terms by taking equity and social justice issues into account at all scales - right up to international relations.

We need to mobilise: long and very long-term studies which means it is possible to learn from changes to ancient societies and even their disappearance; comparative approaches suited to the wide range of possible applications given the profound territorialisation of situations (rural/urban, North/North, etc.); the interplay of scales given that local-level changes and solutions dovetail with their global counterparts; micro-local and experiential analyses aimed

at understanding the deep-rooted mechanisms of usage and the large datasets required to best understand processes and create projections of possible trajectories.

The accepted meanings of shared sciences range from the involvement of populations in data collection to the co-production of science through knowledge-sharing mechanisms. These sciences are also strongly involved in research into the planet's habitability along with interdisciplinary approaches that particularly involve interweaving 'natural' biological, physical, chemical and social processes or combining them with technical and technological systems.

Scientists have a key role to play but this needs to be rethought. What is the legitimacy of the scientific voice and what role should be played by scientists? Controversies, the role of expert reviews and their relationship to the decision-making process are factors that mean the whole subject is currently in a state of flux. The humanities and social sciences need to look back on our experiences and studies so our disciplines can play their full part in understanding the stakes of what is actually occurring and in shaping the worlds of the future.

Digital transitions and artificial intelligence

The digital transition, like other contemporary transitions, is a global turning point that is having a profound effect on the humanities and contemporary social sciences. The ethics of algorithms and artificial intelligence, natively digital artistic creations, the digitisation of heritage, the digital economy, blockchains and new currencies, the sociology of networks, Internet law, e-tech, human-machine interfaces and the digital conversion of methods for disseminating science are just some of the new scientific questions brought up by the integration of technologies, their production, methods and philosophy into research.

The digital transition affects both the objects of 'datafied' knowledge and the methods used to discover, analyse and validate them, involving both upstream training and the epistemology of the human and social sciences, as well as the way in which they interact with society downstream (dissemination of knowledge, development in the form of start-ups, etc.). Methodological breaks with the past in the digital humanities and computational social sciences are inseparable from this transformation. It is also important to study these and support researchers and their teams.

Methodological breaks with the past in the digital humanities and computational social sciences are inextricably linked to this kind of transformation. This requires research into the ethical and economic issues involved with such practices along with an analysis of their organisational and methodological effects (accelerating research and new economies of attention, reorganisation of scientific roles and disintermediation, etc.). The aim is to support this digital transition by taking advantage of the new issues and methods it brings to the table. This could involve observing digital cultures, benefiting from natively digital data and their dissemination methods and finally taking a step back from its disruptive effects and the fantasies the transition can engender.

The emergence of a generation of researchers who are culturally at ease with digital socialities and universes of data means we need to foster interest in new and often interdisciplinary themes, promote methods and support original digital ecosystems with strong transformative power.

Specifically, the Institute takes a dual and parallel approach to artificial intelligence (AI):

- In its impact on research. CNRS Humanities & Social Sciences actions, projects and research teams that use AI or aim to study the repercussions and consequences of the use of AI tools for research purposes. To achieve this, the

Institute has favoured major epistemological and methodological studies on the following questions. How is AI changing the way researchers work on science, understand and visualise results? What are the consequences of the use of massive data that AI makes possible? Does AI in the form of an empirical approach exist in opposition to theoretical modelling? What role is data science playing in training, laboratories, conferences and journals? How is AI leading to research being reorganised? What is the current situation regarding the appropriation and mastery of the available IT tools and their sovereignty and also regarding the interpretability, refutability and reproducibility of research results themselves? Which types of AI are the best suited to which research aspects? What new biases specific to AI may emerge?

- In its social implications. Our aim is to take an interdisciplinary look at the ways in which artificial intelligence is changing society: facial recognition, connected objects, commerce and consumption, health, democratic and personal life and forms of work are all being transformed by AI. The subject extends to robotics, human-computer interaction, support for decision-makers, massive data, social web platforms and the rise of micro-work. These changes come with considerable accompanying problems in terms of AI's economic, geographical and environmental impact, the protection of private data, legal liability, the control of possible ethnic and gender bias, explicability and traceability. All these societal issues need to be reformulated as research questions, particularly by inviting AI researchers to jointly develop ethically sound (*ethics by design*) and socially responsible AI tools and methods and to consider opening up training datasets. Work is also required on the environmental challenges of AI with more thought required about AI's ecological impact and support for the development of more 'frugal' AI.

Educational inequalities

The various surveys carried out in France by the Ministry of Education's Evaluation, Forecasting and Performance Department (DEPP) have shown that the influence of social inequalities on educational success has remained much the same over the last thirty years. The DEPP's data confirm the conclusions of international studies - most notably TIMMS and PISA - which have revealed that the level of French pupils is below that of pupils in other industrialised countries and also, more worryingly, that France has the worst ranking among OECD countries for the effect social background has on the level of pupils' success or otherwise at school.

The CNESCO's 2016 scientific report '*Inégalités sociales et migratoires. Comment l'école amplifie les inégalités sociales*' (Social and migratory inequalities. How schools amplify social inequalities) stressed that the concept of social justice in French schools has long been based on equal opportunities viewed from a meritocratic perspective and indeed remains so. All pupils should benefit from equal treatment in the successive selection and orientation processes during their time at school. This egalitarian educational approach partially explains the difficulty the French educational system has had in implementing teaching methods that are differentiated according to pupils' requirements, in leaving behind purely quantitative assessment to promote formative assessment methods and finally in promoting emulation and stimulation over competition between pupils to improve the well-being of schoolchildren.

Today's French education system aims to promote a new concept of equality of opportunity that is actually based on *equity* of opportunity. This shift in perspective takes the diversity of people's starting points in life into account and requires significant input from humanities and social sciences. Such research could take a historical or sociological approach to enhancing

understanding of how society's existing education policies and inequalities can foster or reproduce inequalities that have already been observed in the educational sphere. Economic and political sciences and law are needed to evaluate the effect of public policies on reducing educational inequalities and the cost of such policies in comparison to their effects. This research is at the interface between different disciplines and aims to assess the effect of inequalities on the brain's development, cognitive processes, learning at school. Another aim is to evaluate the effect of 'DYS' or neuro-developmental disorders and other disabilities on pupils' capacity to acquire basic knowledge and on their learning as a whole. Another question brought up by this research concerns the role data processing and, more broadly, digital technology and artificial intelligence should play in learning at school given the possibility they may offer of individualising learning pathways that are adapted to learners' requirements. Other questions have come up about the fundamentals of education in our rapidly changing world (climate change, artificial intelligence, growing economic and social inequalities) and the skills people need to acquire such as critical thinking, understanding complex systems, communication and socio-emotional skills. Finally, this research questions the very notion of an educational community and its scope because it situates the educational approach in a broader context that includes schools as a fundamental component but not the only one. In this way, this research involves the humanities in study of the epistemological and normative orientations of educational policies and their supporting elements.

This ambitious programme is a response to global issues and thus should not be limited to just the study of inequalities in France. The CNRS's ability to involve all the scientific disciplines linked to the issue of educational inequalities combined with the organisation's international positioning mean it is well placed to explore structuring a global research community on this theme. Structuring on this scale is itself a source of questions that represent scientific gambles and public policy challenges alike. How can we construct research policies on the subject of educational inequalities in countries with weak or non-existent human and material resources for interdisciplinary research? How can an education policy that effectively targets inequalities be constructed without such resources? The CNRS's international laboratories and networks mean scientific and interdisciplinary collaboration scenarios can be envisaged and made much easier. These would involve local academic and political stakeholders, international organisations with an interest in development, and CNRS researchers assigned to work in the field.