

ESTRATTA

TRACCIA n. 3

2023-1DTEC-CLA – 22/11/2023

The human brain has evolved the ability to support communication in complex and dynamic environments. In such environments, language is learned, and mostly used in face-to-face contexts in which processing and learning is based on multiple cues: linguistic (such as lexical, syntactic), but also discourse, prosody, face and hands (gestures). Yet, our understanding of how language is learnt and processed, and its associated neural circuitry, comes almost exclusively from reductionist approaches in which the multimodal signal is reduced to speech or text. ECOLANG will pioneer a new way to study language comprehension and learning using a real-world approach in which language is analysed in its rich face-to-face multimodal environment (i.e. language's ecological niche). Experimental rigour is not compromised by the use of innovative technologies (combining automatic, manual and crowdsourcing methods for annotation; creating avatar stimuli for our experiments) and state-of-the-art modelling and data analysis (probabilistic modelling and network-based analyses). ECOLANG studies how the different cues available in face-to-face communication dynamically contribute to processing and learning in adults, children, and aphasic patients in contexts representative of everyday conversation. We collect and annotate a corpus of naturalistic language which is then used to derive quantitative informativeness measures for each cue and their combination using computational models, tested and refined on the basis of behavioural and neuroscientific data. We use converging methodologies (behavioural, EEG, fMRI and lesion-symptom mapping) and we investigate different populations (3-4-year-old children, healthy and aphasic adults) in order to develop mechanistic accounts of multimodal communication at the cognitive as well as neural level that can explain processing and learning (by both children and adults) and can have impact on the rehabilitation of language functions after stroke.

The fundamental activity of the ERC shall be to provide attractive long-term funding to support excellent investigators and their research teams to pursue ground-breaking, high-gain/high-risk research. ERC funding shall be awarded in accordance with the following well-established principles. Scientific excellence shall be the sole criterion on which ERC grants are awarded. The ERC shall operate on a 'bottom-up' basis without predetermined priorities. The ERC grants shall be open to individual teams of researchers of any age, gender, and from any country in the world, working in Europe. The ERC shall aim to foster healthy competition across Europe based on robust, transparent, and impartial evaluation procedures which address potential gender bias.

The ERC shall give priority to assisting the best starting researchers with excellent ideas to make the transition to independence by providing adequate support at the critical stage when they are setting up or consolidating their own research team or programme. The ERC will also continue to provide appropriate levels of support for established researchers. The ERC shall also give support, as necessary, to new ways of working in the scientific world with the

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potential to create breakthrough results and to facilitate exploration of the commercial and social innovation potential of the research which it funds. By 2020, the ERC shall therefore aim to demonstrate that the best researchers are participating in the ERC's competitions, that ERC funding has led to scientific publications of the highest quality and to research results with high societal and economic potential impact, and that the ERC has contributed significantly to making Europe a more attractive environment for the world's best scientists. In particular, the ERC shall target a measurable improvement in the Union's share of the world's top 1 % most highly cited publications. In addition, it shall aim at a substantial increase in the number of excellent researchers from outside Europe whom it funds. The ERC shall share experience and best practices with regional and national research funding agencies to promote the support of excellent researchers. Furthermore, the ERC shall further raise the visibility of its programmes. The ERC's Scientific Council shall continuously monitor the ERC's operations and evaluation procedures and consider how best to achieve its objectives by means of grant schemes that emphasise effectiveness, clarity, stability, and simplicity, both for applicants and in their implementation and management, and to respond to emerging needs.

1. **Translate the section in bold into Italian;**
2. **Provide a brief summary, written in English, of the main points discussed in the text above.**

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This ERC Work Programme is the fourth under the Specific Programme implementing Horizon Europe – the Framework Programme for Research and Innovation of the European Union ('Horizon Europe'). Most third countries associated to Horizon 2020 have already, or are expected to be, associated to Horizon Europe. For the purposes of the eligibility conditions, transitional arrangements will continue to apply to applicants established in Horizon 2020 Associated Countries or in other third countries negotiating association to Horizon Europe. Starting, Consolidator, and Synergy Grants will be available under this Work Programme under the actual cost model. Advanced Grants will be implemented as a pilot call using a lump sum contribution. Restrictions on applications to the 2024 calls based on the outcome of the evaluation of previous calls, as well as restrictions for former panel members will apply – see restrictions on submission of proposals under "Admissibility and eligibility criteria". As of 2024, restrictions will also apply to Principal Investigators with successful proposals undergoing grant preparation in selected 2023 calls. For ERC Starting and Consolidator Grants, as from 2023, the reference date towards the calculation of the eligibility period is the certified date of the successful defence (and not the award) of their first PhD degree. While scientific excellence remains the sole criterion of evaluation for frontier research grants, changes to the structure of the Curriculum Vitae and Track Record, as well as to the evaluation procedure, have been introduced. For Starting, Consolidator, and Advanced Grants, a maximum of 44 proposals per panel will be assessed at step 2 of the evaluation. Moreover, a distinction in the scoring at step 1 will be made between proposals obtaining a score of A and invited to step 2 of the evaluation, and proposals obtaining a score of A but not ranked sufficiently high to be invited to step 2. ERC Principal Investigators funded under one of the abovementioned grant schemes of prior Work Programmes will also be able to apply for complementary funding via the Proof-of-Concept Grants, as well as for the Public Engagement with Research Award. As of 2024, applications to the Proof-of-Concept Grant will be evaluated and selected in two instead of three rounds, based on two specific cut-off dates.

The fundamental activity of the ERC, via its main frontier research grants¹, is to provide attractive, long-term funding to support excellent investigators (Principal Investigators) and their research teams to pursue ground-breaking and ambitious research. Research funded by the ERC is expected to lead to advances at the frontiers of knowledge and to set a clear and inspirational target for frontier research across Europe. The ERC also awards complementary funding for the Principal Investigators funded by its main grants, in order to fulfil its mission of supporting new ways of working in the scientific world, and to raise the profile of frontier research in Europe, as well as the visibility of ERC programmes to researchers across Europe and internationally. Excellence is the sole criterion on the basis of which ERC frontier research grants are awarded. The ERC's main grants, as well as other Principal Investigator-led actions, are evaluated based on the sole criterion of excellence, comprising a set of detailed

evaluation elements decided by the ERC Scientific Council based on the specific objectives of the grant. The evaluation of applications to the ERC's main grants is conducted by peer review panels composed of renowned scientists.

and scholars selected by the ERC Scientific Council. The panels may be assisted by independent external experts working remotely. The ERC's peer review evaluation process has been carefully designed to identify scientific excellence irrespective of the gender, age, nationality, or institution of the Principal Investigator and other potential biases, and to take career breaks, diverse research career paths, as well as the applicant's contributions to the research community into account. The evaluations are monitored to guarantee transparency, fairness, and impartiality in the treatment of proposals. ERC calls are expected to be highly competitive.

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The Horizon Europe strategic plan sets out overarching strategic orientations for EU research and innovation investments over the period 2021-2024. Focusing on the second pillar of Horizon Europe, 'Global challenges and European industrial competitiveness', it also covers relevant activities in the first pillar, 'Excellent Science', and the third pillar, 'Innovative Europe', and the 'Widening Participation and Strengthening the European Research Area' part. Overall, the aim of the strategic plan is to ensure an effective interface between EU policy priorities, and programme activities and ultimately, the research and innovation projects funded by Horizon Europe. The intention is to stimulate research and innovation investments where they are particularly needed to address the challenges we are facing, and, most importantly, deliver results. The Horizon Europe strategic plan defines four key strategic orientations: 1) Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations. 2) Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment. 3) Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction, and production systems. 4) Creating a more resilient, inclusive, and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality healthcare, and empowering all citizens to act in the green and digital transitions.

Each of the key strategic orientations encompasses three to four cross-cutting impact areas, which in turn link to a number of expected impacts. The key strategic orientations and impact areas are formulated based on the expected impacts, which have been defined with input from stakeholders, largely bottom-up, during the strategic planning process. The expected impacts are structured by the six clusters that make up Horizon Europe's second Pillar, 'Global Challenges and European Industrial EU Grants: HE Programme Guide: V4.0 – 15.10.2023 10 Competitiveness'. The expected impacts define the wider effects on society, the economy and science to be targeted by research and innovation activities, but not the manner in which to achieve them. This is up to the applicants when designing their project proposals.

In total, the strategic plan defines 32 expected impacts that cover a wide range of social, economic, ecological and scientific aspirations. Each expected impact serves as the foundation for a corresponding destination in the relevant work programme parts. Furthermore, the strategic plan identifies European co-programmed and co-funded partnerships, as well as the EU missions and contains orientations regarding crosscutting elements of Horizon Europe related to areas for international cooperation, and key specific issues, such as gender, social sciences and humanities integration, key enabling technologies, ethics, open science practices, as well as social innovation and the EU taxonomy. The Horizon Europe strategic plan is the product of a series of intense co-creation activities among

Commission services and co-design activities with Member States, members of the European Parliament, stakeholders and citizens at large. This has taken place through successive rounds of public consultations, web surveys and interactive workshops, in particular during the annual Research and Innovation Days.

The impact-driven design of Horizon Europe aims at maximising the effects of Research and Innovation investments, ensuring their contribution to the Commission's priorities. It marks a paradigm change in the design of the EU R&I Framework Programmes from an activity-driven to an impact-driven programme. One of the novelties which facilitates such an impact-driven approach is the strategic planning process, which identifies the expected impacts of the first four years of Horizon Europe. This represents a paradigm change also for the work programmes, that henceforth builds on this strategic planning. The structure of Horizon Europe work programmes translates this impact-driven nature: they are organised around 'Destinations', describing the expected impacts identified in the Strategic Planning, and 'topics', describing the related expected outcomes critical to the achievement of such impacts.

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