Annex 1

Competition announcement for the assignment of 1 research grant at the University of Udine, entitled “Neural bases of Religiosity and Spirituality the predictive brain: electroencephalographic studies” SSD: M-PSI/04 (principal investigator, Cosimo Urgesi)

Art. 1

A selection procedure is hereby launched for the award of 1 research grant at the University of Udine, as identified in Attachment A which constitutes an integral part of the present announcement. The research grant is linked to the research project and is subject and conditioned upon the relative funding. The fellowship may be renewed, in compliance with Art. 22, Law No. 240 of 30 December 2010 (as in the text in force before the implementation of the Conversion Law of the D.L. 36/2022, L. 79/2022), Law No. 11 of 27 February 2015, and the current regulations of the University of Udine for awarding research grants, issued with the Rector’s Decree No. 182 of 31 March 2021. The renewal is subject to the scientific coordinator’s positive assessment of the researcher’s activities, an adequate scientific rationale, and a corresponding financial covering.

The research fellowship does not give rise to any right with regards to accessing University posts.

Any personal communication to candidates related to this selection will be sent exclusively to the email address indicated when registering for the selection, as mentioned in Art. 5.

Art. 2

The research grant described in this competition announcement and the required qualifications to apply for the position are identified in Attachment A. The lack of the admission requirements leads to the automatic exclusion from the competition procedure.

Possession of a PhD or equivalent degree obtained abroad or, only for the interested areas, of a medical specialization accompanied by an adequate scientific production, constitutes a preferential qualification for awarding the research fellowship of this selection, if it has not been provided as a mandatory requirement.

For the only purpose of the admission to the competition, the Examining Board (Art. 7) shall assess the equivalence of the qualification obtained abroad, except for the evaluation of the medical specialization.
qualification to which Article 38 of the Legislative Decree 165/2001 and subsequent modifications and additions, and EU regulations on the matter, shall be applied.

The Examining Board will proceed to the evaluation of the qualification obtained abroad according to the documentation attached to the application form. The Examining Board may exclude the candidate if the submitted documentation does not provide sufficient information for the assessment. Therefore, applicants must enclose all the documentation in their possession relating to their qualification in order to provide the Examining Board with sufficient information for assessment.

Candidates holding a qualification issued by a European Research Area country, if successful, must submit, if not already attached to the application form one of the following options:
- Supplement Diploma in English issued by the competent University.
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at https://cimea.diplo-me.eu/udine/#/auth/login

Candidates holding a qualification issued by a non-European Research Area country, if successful, must submit, if not already attached to the application form one of the following options:
- Declaration of the on-site value of the qualification and the certificate relating to the degree with examinations and grades. A certificate in a language other than Italian or English must be accompanied by an official translation into one of these languages (certified by the competent diplomatic-consular authority or certified by a court in Italy).
- CIMEA Certificate of comparability of the foreign qualification, issued by CIMEA (Information Centre on Academic Mobility and Equivalence) via the "diplome" service at https://cimea.diplo-me.eu/udine/#/auth/login

If the Supplement Diploma or the statement/attestation of comparability are not available when signing the contract, the applicant must demonstrate that he/she has requested the documentation and submit it as soon as possible.

Any exclusion from the selection procedure due to lack of eligibility requirements, absence of required documents, failure to sign the selection application or submission of the selection application in a manner different from what is provided for in this call for applications will be communicated to applicants exclusively at the email address indicated in the application form.

Art. 3

The research grant referred to in this call for applications cannot be awarded:

a. to employees of Universities and the entities referred to in Article 22, section 1, of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022);

b. to those who have already been awarded research grants pursuant to Italian Law no. 240 of 30 December 2010 (prior to the reform introduced by Law no. 79 of 29 June 2022) for the maximum period provided by law, even if not continuously, excluding the period in which the grant was used in conjunction with the doctorate, up to the legal term of the relative course;

c. to those who have already benefited from research grants and fixed-term researcher contracts provided for, respectively, in Articles 22 and 24 of Italian Law no. 240 of 30 December 2010 (in the text prior to the reform introduced by Law no. 79 of 29 June 2022), for a total of 12 years, even if not consecutive;

d. to anyone who has a degree of kinship or affinity, up to and including the fourth degree, with:
- the Rector, the Director General or a member of the Board of Directors of the University of Udine;
- the scientific supervisor or a professor/researcher belonging to the department or organisation hosting the research grant in question.

The research grant provided for in this call for applications cannot be combined:

a) with scholarships of any kind, except for those granted by Italian or foreign institutions to supplement, by means of stays abroad, the fellow's training or research activities;
b) with other research grants;
c) with an employment relationship, even if part-time, without prejudice to the relevant provisions for employees of public administrations.

The grant awarded under this call for applications is also incompatible with simultaneous attendance at university degree courses, either Bachelor's degree or Master's degree courses, research Doctorates with scholarships and medical specializations, in Italy or abroad.

Art. 4

Applicants must enclose with their application, under penalty of exclusion, the following documents:

a) their professional scientific CV, highlighting the candidate's aptitude for carrying out and implementing the research project (Attachment A);
b) their identity card, their passport or any other identification document;
c) (for candidates with a foreign qualification only) certification or self-certification of both the academic qualification required for the admission to the selection, and of the exams (with evaluation) took during the period of study abroad, and of any other document that can be useful to the evaluation of the degree by the Examining Board.

Applicants can attach to the application, publications and any other certification considered useful to demonstrate the qualification based on the research program (Attachment A) and to certify any research activity accomplished at public or private institutes (indicating the starting and ending date and the duration).

The documents and qualifications mentioned above must be submitted in Italian or English. Those that are not as requested will not be evaluated. Documents originally written in a language other than Italian or English must come with a translation in Italian or English, that the candidate will do on its own responsibility. The translation can be an abstract concerning the thesis.

Italian and Community candidates wishing to submit qualifications referring to conditions and facts attested by Public Administrations must proceed exclusively with self-certification. Non-EU citizens legally residing in Italy may self-certify only data that can be verified or certified by Italian public bodies. They may also use declarations in lieu when provided for by an international convention between Italy and the declarant's country of origin. Non-EU citizens not residing in Italy cannot self-certify.

Only the qualifications possessed by the candidate on the date the application form is submitted and submitted in accordance with the procedures set out in Article 5 will be assessed.

Failure to submit mandatory documents provided for in this article will constitute grounds for exclusion from the selection.

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1 Please be aware that the residence permit is not an identification document.
Art. 5
The submission of the applications for the present call starts on November 16, 2023 at 2:00 pm (Italian time) and ends on November 30, 2023 at 2:00 pm (Italian time).

The application to take part in the selection must be completed, under penalty of exclusion, using the appropriate online procedure, available at the link https://pica.cineca.it/

The procedure involves an applicant registration step, for those who do not already have an account, and then an application completion step.

Once completed, the online application must be signed in the manner described in the online procedure (manual signature with attached identity document or digital signature), under penalty of exclusion from selection. The application does not have to be signed if you access the above-mentioned online procedure using your SPID ID.

The qualifications referred to in Article 4 must be attached to the application in .pdf format. Individual .pdf files may not exceed 30MB.

The application for participation in the selection is automatically sent to the University of Udine with the definitive closing of the online procedure.

The University Administration:
- is not responsible if it is impossible to read the submitted documentation in electronic format due to damaged files;
- shall not accept or take into consideration qualifications or documents received in paper form or by any means other than what is specified in this article.

Reference to documents or publications already submitted in connection with other competitions is not allowed.

The Administration is not responsible for any missing document or communication because of inaccurate indication of residence and/or address submitted by the candidate during the application. Also, the Administration is not responsible if the candidate has not communicated changes in this information, or has communicated them too late. The Administration is also not responsible for any postal or telegraphic problems not attributable to the Administration itself.

Applicants are advised not to wait until the last few days before the closing date to submit their application. The University accepts no responsibility for any malfunctions due to technical problems and/or overloading of the communication line and/or application systems.

Art. 6
The selection procedure is held in accordance with the modality indicated in Attachment A.

The test will aim to assess the general preparation, experience and aptitude for research of the candidate. It will consist in the evaluation of the professional scientific curriculum, of the publications and qualifications presented, and of the interview, where foreseen.
Art. 7

The Examining board for the competition is identified in Attachment A of the present competition announcement, of which it is an integral part.

At its first meeting, the Examining board shall appoint its President and Secretary, and establish the criteria and methods for evaluating the qualifications and the interview, where foreseen.

The results of the qualifications assessment must be disclosed to applicants during the interview, where foreseen.

The Examining board can award a maximum of 100 points (one hundred out of one hundred) to the selection.

At the end of the evaluation procedure, the Examining board shall formulate the general merit list based on the overall score of each candidate, and draw up the minutes of the whole competition procedure.

Based on the ranking list, the assignment is awarded to candidates who have obtained a minimum overall score of 70/100 (seventy out of one hundred).

The Examining board's judgement is final.

The ranking list will be made public exclusively through publication on the University's official website.

Applicants will not be notified of the outcome of the evaluation.

Those who do not declare their acceptance of the research grant and do not present themselves at the research centre within the deadline communicated by the latter, even if not formally, shall lose the right to receive it. Exceptions to this term will only be granted in cases of documented force majeure.

Art. 8

The research activity cannot be started before signing the contract defining the terms and conditions of the collaboration.

The activity covered by the research grant must have the following characteristics:

a) it must be carried out as part of the research programme covered by the grant and not be a merely technical support to it;

b) it must have a close connection with the realization of the research program for which the winner of the grant has been awarded the contract;

c) it must be continuous and, in any case, temporally defined, not merely occasional, and in coordination with the overall activity of the University;

d) it must be carried out autonomously, solely within the limits of the programme prepared by the programme supervisor, without predetermined working hours.

The researcher is required to submit a detailed written report on the work carried out and the results achieved, accompanied by the opinion of the scientific supervisor, to the reference organisation at the intervals set out in the contract. The researcher must also submit interim reports and timesheets, if requested by the reference organisation.

Either the fellow or the reference organisation may withdraw from the contract.
The reference organisation may terminate the contract not only in the cases referred to in Article 9, sections 2 and 3, of the "Internal rules for awarding research grants pursuant to law 240 of 30 December 2010" of the University of Udine, but also in the event the research project and therefore the financial coverage on which the research grant is based cease to exist.

Art. 9
The following legal dispositions shall apply to the grant referred to in this call for applications:
- for tax matters, the provisions of Article 4 of Italian Law no. 476 of 13 August 1984, as subsequently amended and supplemented;
- for social security matters, the provisions of Article 2(26) et seq. of Italian Law no. 335 of 8 August 1995, as subsequently amended and supplemented;
- for mandatory maternity leave, the provisions of the Italian Ministerial Decree of 12 July 2007;
- with regard to sick leave, the provisions of Article 1(788) of Italian Law no. 296 of 27 December 2006 and subsequent amendments.

During the period of mandatory maternity leave, the allowance paid by INPS according to Art. 5 of the Italian Ministerial Decree of 12 July 2007 is supplemented by the University up to the full amount of the research grant.

The grant will be paid in monthly instalments.

Art. 10
The data collected as part of the procedure referred to in Art. 5 are necessary to properly manage the selection procedure, for any subsequent management of the research grant and for purposes related to managing services provided by the University. The University of Udine is the Data Controller. At any time, the data subject may request access, rectification and, depending on the University's institutional purposes, cancellation and restriction of processing or oppose the processing of their data. The data subject can always lodge a complaint with the Italian Data Protection Authority. The complete disclosure is available on the University of Udine website in the "Privacy" section, accessible from the home page www.uniud.it Direct Link: https://www.uniud.it/it/pagine/guida/privacy

Art. 11
For all matters not expressly mentioned in this call for applications, refer to the regulations in force on the subject cited in the introduction and to the "Internal rules for awarding research grants pursuant to Italian Law no. 240 of 30 December 2010" of the University of Udine, issued by Rector's Decree no. 182 of 31 March 2021.

Art. 12
The procedure supervisor is Dr Sandra Salvador, Head of the Research Services Area of the University of Udine.

The Responsible office at the University of Udine is "Area Servizi per la Ricerca - Ufficio Formazione per la Ricerca", via Mantica n. 31 - 33100 Udine, Italia.

To request information about the call for applications, please complete the following form available on the University of Udine website: https://helpdesk.uniud.it/SubmitSR.jsp?type=req&accountId=universityofudine&populateSR_id=42105
Responsabile scientifico della ricerca / Principal investigator:

Nome e cognome / Name and surname: Cosimo Urgesi
Qualifica / Position: Professore Associato / Associate Professor
Dipartimento / Department: Lingue e Letterature Comunicazione Formazione e Società / Languages and Literature, Communication, Education and Society
Area MUR / Research field: 11 - Scienze storiche, filosofiche, pedagogiche, psicologiche
Settore concorsuale e Settore scientifico disciplinare / Scientific sector: 11/E1; M-PSI/04 - Psicologia dello sviluppo e psicologia dell'educazione

Titolo dell'assegno di ricerca / Topic of the research fellowship “assegno di ricerca”:

Basi Neurali della Religiosità e Spiritualità e Cervello predittivo: studi di elettroencefalografia.

Testo in italiano:

L'obiettivo generale di questo progetto di ricerca è quello di indagare le basi neurali della spiritualità (S) e della religiosità (R) utilizzando registrazioni elettroencefalografiche (EEG) e metodi di stimolazione cerebrale non invasiva. S&R si riferiscono al complesso modello di sentimenti, pensieri e comportamenti che riflettono una visione della condizione umana in relazione a contesti auto-trascendenti, entità invisibili e agenti soprannaturali (1-2). Una serie crescente di studi ha analizzato le basi neurali di S&R (3-7). Secondo la prospettiva della codifica predittiva della cognizione (8), aspettative precedenti (top-down) sullo stato del mondo esterno vengono confrontate con le afferenze sensoriali per cercare di attenuare l'errore di previsione. S&R sono stati associati a una maggiore calibrazione delle aspettative precedenti, a scapito dell'elaborazione dell'errore di previsione, nella percezione di eventi esterni (8-9). Per testare questa ipotesi, sarà introdotto un nuovo approccio comportamentale che consente la manipolazione selettiva delle aspettative e il monitoraggio degli errori per l'elaborazione esterocettiva (in un paradigma di rivalità binoculare) e saranno testati i cambiamenti plasici di S&R misurati con un test di associazione implicita e con questionari (10). Verranno considerati anche il ruolo moderatore dei tratti schizotipici e autistici (11). In una prima fase, verranno testati gli effetti delle manipolazioni comportamentali delle previsioni esterocettive su distinte bande di oscillazione cerebrale registrando l'elettroencefalografia ad alta densità. Sulla base di studi precedenti (12), ci aspettiamo che il rinforzo delle aspettative precedenti (attraverso l’effetto placebo di una stimolazione non attiva) porti a una modulazione delle frequenze alfa-beta, mentre il rinforzo del peso del monitoraggio dell'errore (attraverso un piano di feedback) porti a una modulazione della banda gamma. Inoltre, ci aspettiamo che il rinforzo di aspettative o monitoraggio dell'errore nel compito esterocettivo porti a una modulazione della religiosità ma non della spiritualità. Nella seconda fase, queste oscillazioni cerebrali verranno rinforzate sintonizzando la frequenza della stimolazione transcranica a corrente alternata (tACS; 13). Ci aspettiamo che la tACS nelle bande alfa/beta porti a un aumento dell'uso di aspettative nel compito esterocettivo, mentre la tACS nelle bande gamma
rinforzi il monitoraggio dell’errore, inducendo a sua volta modificazioni della S&R implicite. Nel complesso, i risultati degli studi contribuiranno a decifrare il codice di oscillazione cerebrale associato all’elaborazione S&R, considerando anche le differenze interindividuali, e ad utilizzare questo codice per trascinare l’attività neurale e modulare S&R. Ciò farà luce sui fondamenti neurocognitivi di S&R all'interno di una visione generale della mente umana. Il progetto in ultima analisi contribuisce alle neuroscienze della cognizione religiosa e apre la strada a nuovi interventi per trattare i disturbi delle rappresentazioni del sé. Il programma di ricerca è parte di un progetto di più larga scala finanziato dalla John Templeton Foundation, che include partner internazionali nel contesto europeo e del Nord America e volto allo studio delle neuroscienze cognitive della cognizione religiosa (https://www.cognitiveneuroscienceofreligion.org). L’assegnsita si occuperà in particolare della parte EEG dello studio.

**Bibliografia:**

5. doi:10.1016/j.neuron.2010.01.026.

**Text in English:**
The general aim of this research project is to investigate the neural bases of spirituality (S) and religiosity (R) using electroencephalographic (EEG) recordings and noninvasive brain stimulation (NIBS) methods. Spirituality (S) and religiosity (R) refer to the complex pattern of feelings, thoughts, and behaviors that reflects a view of the human condition in relation to self-transcendent contexts, unseen entities, and supernatural agents (1-2). The growing interest for the neuroimaging characterization of the brain networks involved in S&R (2) has been accompanied by
neuropsychological and noninvasive brain stimulation (NIBS) studies of the causal involvement of specific circuits in S&R (3-7). According to a predictive coding account of cognition (8), there is a hierarchical organization of the brain in which each layer builds upon priors’ beliefs (top-down processes) about the external world’s states trying to attenuate the predicting error estimated from input information. Crucially, S&R have been associated with greater reliance on priors, at the expense of the processing of prediction-error, in the perception of external events (8-9). To test this hypothesis, we introduce a novel behavioral approach allowing for the selective manipulation of priors and error monitoring for exteroceptive (visual binocular rivalry) processing and test the resulting plastic changes of S&R as measured with an implicit association test procedure and questionnaires (10). The moderating role of schizotypal and autistic traits are also considered (11). In a first stage, the effects of behavioral manipulations of exteroceptive predictions on distinct oscillatory mechanisms and S&R are studied by recording high-density electroencephalography. Based on previous findings (12), we expect that inducing higher exteroceptive prior should modulate alpha/beta frequencies in cortical areas involved in exteroceptive processing, leading to an increased R (vs. S) scores. Boosting of prediction error processing in exteroceptive tasks should influence gamma frequencies resulting in decreased R (vs. S) scores. In the second stage, these brain oscillations are entrained by tuning the frequency of low-intensity alternating (rhythmic) currents applied on the scalp surface with transcranial alternating current stimulation (13). By directly modulating specific bands of neural oscillations in the alpha/beta or gamma frequency range in distinct brain areas, we will directly shape the strength of the brain oscillations associated with prior or prediction error, respectively, during the processing of external vents, providing causal evidence about brain regions and frequency bands involved in these processing. Crucially, TACS modulation in these tasks is expected to trigger processing signal- (prior vs. prediction error) and domain specific effects on the tasks and this is expected to induce aftereffects in the strength of the R or S scores. Overall, the results of the studies will contribute to decipher the brain oscillation code associated to S&R processing, also considering interindividual differences, and to use this code to entrain neural activity and modulate S&R. This will shed light on the neurocognitive foundations of S&R within a general view of the human mind. The project ultimately aids to the neuroscience of religious cognition and paves the way for new interventions to treat disorders of self-representations. The research activity is part of a larger scale project funded by the John Templeton Foundation, involving European and North-America partners and devoted to the study of the cognitive neuroscience of religious cognition (https://www.cognitiveneurosciencesofreligion.org). The research fellow will be involved particularly in the EEG part of the project.

References:


Struttura dell’Università di Udine presso la quale verrà sviluppata l’attività di ricerca / Department or other structure of the University of Udine where research activities will be carried out:

Laboratorio di Neuroscienze Cognitive, Dipartimento di Lingue e Letterature, Comunicazione, Formazione e Società (DILL) / Cognitive Neuroscience Laboratory, Department of Languages and Literatures, Communication, Education and Society.

Importo dell’assegno di ricerca (al lordo oneri carico assegnista) / Total grant gross for the research fellowship:

€ 30.564,50

Durata dell’assegno di ricerca / Duration of the research fellowship “assegno di ricerca”:

14 mesi / months

Finanziamento / Financed by:

La copertura finanziaria graverà sul progetto TEMPLETON_2022_CNRC_URGESI - SEARCHING FOR THE NEURAL FOUNDATIONS OF SPIRITUALITY AND RELIGIOSITY IN THE PREDICTIVE CODING OF THE INTERNAL AND EXTERNAL WORLD; John Templeton Foundation under subcontract with the Rehabilitation Institute of Chicago d/b/a Shirley Ryan AbilityLab. CUP: G23C22002820007.

Requisiti di ammissione / Minimum qualifications necessary:

- Possesso di un diploma di laurea vecchio ordinamento (ante decreto 3 novembre 1999 n. 509) o di laurea specialistica/magistrale (ex decreto 3 novembre 1999 n. 509 e decreto 22 ottobre 2004 n. 270) o titolo equivalente conseguito all’estero;
- possesso di un curriculum scientifico professionale idoneo allo svolgimento dell'attività di ricerca contemplata.
- University degree obtained before Decree n. 509 of 3 November 1999 or specialist/Master's degree (post decree n. 509 of 3 November 1999 and decree n. 270 of 22 October 2004) or equivalent degree obtained abroad;
- professional scientific curriculum suitable for the research activity above mentioned.
**Procedura selettiva / Competition procedure:**

Valutazione per soli titoli / Assessment of qualifications only

**Commissione giudicatrice / Examining Board:**

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<td><strong>Membri Effettivi / Permanent members</strong></td>
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<td>Cosimo Urgesi</td>
<td>PA</td>
<td>M-PSI/04</td>
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