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Affective and rhetorical framing in expert communication: exploratory EEG evidence from inflation-related messages

Afektywne i retoryczne ramowanie komunikacji eksperckiej: eksploracyjne dane EEG dotyczące przetwarzania komunikatów o inflacji

ABSTRACT

This two-stage exploratory EEG study examined whether neutral and affective/rhetorical expert messages concerning inflation are associated with different patterns of spectral EEG activity. The project involved sixteen adults in two consecutive stages. Stage 1 served as a feasibility pilot assessing recruitment, stimulus presentation, participant tolerance, comprehension checks and the practicability of EEG recording during exposure to expert communication. Stage 2 provided the basis for the descriptive spectral analysis and included six documented participant-level spectra per condition. The comparison was based on Grand Average spectral exports for the neutral and affective/rhetorical conditions and was interpreted as an exploratory condition-level contrast rather than a confirmatory trial-level analysis.

The affective/rhetorical condition showed higher spectral indices than the neutral condition, particularly in delta and theta ranges over selected frontal, temporal and parietal sites. These findings are interpreted as preliminary indicators of increased cognitive-affective engagement during reception of rhetorically salient expert communication. They do not provide direct evidence of psychological reactance, cognitive defence or motivated reasoning. Instead, the study identifies a feasible methodological direction for future research combining EEG with behavioural and self-report measures of message reception. The results should therefore be treated as hypothesis-generating evidence on the neurocognitive processing of affectively and rhetorically framed expert communication.

KEYWORDS: EXPERT COMMUNICATION, AFFECTIVE FRAMING, EEG, COGNITIVE-AFFECTIVE PROCESSING, PSYCHOLOGICAL REACTANCE, PILOT STUDY, MEDIA COMMUNICATION

STRESZCZENIE

W dwuetapowym eksploracyjnym badaniu EEG sprawdzono, czy neutralne oraz afektywnie i retorycznie nacechowane komunikaty eksperckie dotyczące inflacji wiążą się z odmiennymi wzorcami aktywności widmowej EEG. W projekcie uczestniczyło łącznie szesnaście osób dorosłych badanych w dwóch kolejnych etapach. Etap 1 miał charakter pilotażu wykonalności i służył ocenie rekrutacji, prezentacji bodźców, tolerancji procedury przez uczestników,

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kontroli zrozumienia oraz możliwości rejestracji EEG podczas odbioru komunikatów eksperckich. Etap 2 stanowił podstawę opisowej analizy widmowej i obejmował sześć udokumentowanych widm uczestnikowskich na każdy warunek. Porównanie oparto na eksportach Grand Average dla warunku neutralnego oraz afektywno-retorycznego i interpretowano jako eksploracyjny kontrast na poziomie warunków, a nie jako konfirmacyjną analizę prób-po-próbie.

W warunku afektywno-retorycznym odnotowano wyższe wskaźniki widmowe niż w warunku neutralnym, szczególnie w zakresach delta i theta w wybranych lokalizacjach czołowych, skroniowych i ciemieniowych. Wyniki te interpretowane są jako wstępne wskaźniki zwiększonego zaangażowania poznawczo-afektywnego podczas odbioru retorycznie nacechowanej komunikacji eksperckiej. Nie stanowią one jednak bezpośredniego dowodu reakcji psychologicznej, obrony poznawczej ani motywowanego rozumowania. Badanie wskazuje raczej na obiecujący kierunek metodologiczny dla dalszych analiz łączących EEG z miarami behawioralnymi i samoopisowymi dotyczącymi odbioru komunikatów. Uzyskane rezultaty należy zatem traktować jako hipotezotwórcze dane dotyczące neurokognitywnego przetwarzania afektywnie i retorycznie ramowanej komunikacji eksperckiej.

SŁOWA KLUCZOWE: KOMUNIKACJA EKSPERCKA, RAMOWANIE AFEKTYWNE, EEG, PRZETWARZANIE POZNAWCZO-AFEKTYWNE, REAKTANCJA PSYCHOLOGICZNA, BADANIE PILOTAŻOWE, KOMUNIKACJA MEDIALNA

INTRODUCTION

In conditions of economic and social uncertainty, expert communication is shaped not only by informational content but also by affective tone, rhetorical form and perceived source cues. Even accurate messages may be processed defensively when they are experienced as emotionally charged, ideologically salient or autonomy-threatening. This issue becomes particularly relevant in a polycrisis context, where economic instability, social tension and reduced institutional trust may alter how recipients attend to, interpret and evaluate expert messages.

Psychological reactance theory suggests that messages perceived as controlling, prescriptive or threatening to personal autonomy may elicit resistance, counterarguing and defensive appraisal (Brehm, 1966). Recent evidence on persuasive communication and message resistance further indicates that message form can shape reception independently of factual content (Rains, 2013; Li & Shi, 2026). In expert communication, this means that the

same substantive issue may be processed differently depending on whether it is presented in a neutral, technical register or through emotionally salient, metaphorical and rhetorically dense language.

Electroencephalography offers a useful tool for examining neurophysiological responses during message reception, particularly when the aim is to identify early and non-verbal indicators of cognitive-affective engagement. However, EEG spectral activity is not construct-specific and cannot, on its own, identify psychological reactance, motivated reasoning or identity defence. Frontal theta activity has been associated with cognitive control and conflict monitoring, beta-range activity with attentional demand and arousal, delta rhythms with motivational and semantic integration, and frontal alpha asymmetry with approach–avoidance tendencies. In the present study, these indices are therefore interpreted cautiously as non-specific correlates of cognitive-affective processing rather than as direct biomarkers of a defined psychological mechanism.

The present study examined preliminary EEG responses to expert messages concerning inflation that differed in emotional tone, rhetorical form and source salience. The project was organised in two stages. Stage 1 involved ten adult participants and served as a feasibility pilot assessing recruitment, stimulus presentation, participant tolerance, comprehension checks and the practicability of EEG recording during exposure to expert messages. Stage 2 involved six documented participant-level spectra per condition and provided the basis for the descriptive spectral comparison reported in this article. Given the exploratory character of the project, the small Stage 2 analytic subset and the descriptive status of the EEG export, the aims were formulated as research questions rather than confirmatory hypotheses.

- RQ1. What general feasibility observations emerged from the Stage 1 pilot procedure involving ten participants?
- RQ2. Do neutral and affective/rhetorical expert messages concerning inflation differ descriptively in selected spectral EEG indices in the Stage 2 detailed EEG study involving six participant-level spectra per condition?
- RQ3. What methodological constraints should be considered when interpreting the observed neutral–affective contrast in this two-stage exploratory EEG project?

THEORETICAL FRAMEWORK: EMOTIONAL PROCESSING OF EXPERT COMMUNICATION UNDER CONDITIONS OF UNCERTAINTY

This study builds on previous behavioural research by Zubieli et al. (2025), which examined how the emotional tone of expert commentary may shape perceptions of macroeconomic phenomena, particularly inflation forecasts. That work suggested that affective linguistic framing may influence recipients' evaluations independently of informational content and, in some cases, may produce paradoxical or inverse effects. These findings point to the need to examine not only what expert messages communicate, but also how their affective and rhetorical form modulates reception at the cognitive and neurophysiological level.

The present study is grounded in the assumption that message reception is shaped by the interaction between semantic content, affective tone, rhetorical structure, source cues and perceived ideological salience. Expert communication concerning the same substantive issue may therefore elicit different processing patterns depending on whether it is presented in a neutral, technical and institutionally formal register or through more metaphorical, evaluative and emotionally salient language. In this sense, the study does not isolate affective framing from all other communicative features. Rather, it contrasts two ecologically distinct modes of expert communication concerning inflation: a formal institutional message and a rhetorically salient public message.

Affective and rhetorical framing is particularly relevant under conditions of uncertainty. According to appraisal-based accounts of emotion, including the Component Process Model, emotional responses emerge through coordinated changes in cognitive appraisal, physiological activation, motivational tendencies, expressive behaviour and subjective experience (Scherer, 2009; Scherer & Moors, 2019). From this perspective, emotionally charged communication may increase attention and engagement, but it may also intensify cognitive-affective load, especially when the message is perceived as threatening, normatively charged or difficult to integrate with existing beliefs.

Psychological reactance theory provides a second interpretive axis. It assumes that messages perceived as limiting autonomy or imposing a preferred interpretation may elicit resistance, counterarguing and defensive appraisal (Brehm, 1966; Dillard & Shen, 2005; Rains, 2013). Recent work on message resistance and fatigue further suggests that emotionally intense, repetitive or prescriptive communication may reduce persuasive effectiveness and

increase avoidance or oppositional responses (Keating & Skurka, 2024; Li & Shi, 2026). In the present study, psychological reactance is treated as a theoretically relevant possibility, not as an outcome directly measured by EEG.

Affective resonance offers an additional explanation for why rhetorically salient messages may be more engaging. Exposure to emotionally vivid language, metaphor, humour or identity-related cues may facilitate involvement and internal simulation of the speaker's emotional stance (Decety & Lamm, 2006). Such communication may therefore be more memorable and attention-grabbing, but also more cognitively and emotionally demanding. Objective self-awareness theory provides additional background for understanding why normatively charged messages may elicit self-evaluative or defensive processing, although this mechanism was not directly tested here.

The third theoretical axis concerns the interpretation of EEG indices. Electroencephalography can capture temporally sensitive neurophysiological responses during message reception, but spectral EEG activity is not construct-specific. Frontal theta activity has been associated with cognitive control and conflict monitoring, beta-range activity with attentional demand and arousal, delta rhythms with motivational and semantic integration, and frontal alpha asymmetry with approach–avoidance tendencies. However, none of these indices can be treated as a direct biomarker of psychological reactance, motivated reasoning, identity defence or message rejection.

For this reason, frontal alpha asymmetry is retained only as a supplementary exploratory consideration rather than a central inferential outcome. Its interpretation depends on electrode selection, reference scheme, transformation of alpha power and calculation formula, which limits its usefulness in a small exploratory EEG project. The main interpretive focus of the present study is therefore placed on descriptive spectral response patterns as potential, non-specific correlates of cognitive-affective engagement.

Taken together, the theoretical framework supports a cautious interpretation of the neutral–affective contrast. An affectively and rhetorically salient expert message may be associated with stronger attentional, semantic, emotional and regulatory demands than a neutral institutional message. However, the present design does not permit causal attribution of EEG activity to psychological reactance or defensive processing. It allows only for identifying preliminary spectral patterns that may inform future, more controlled studies combining EEG with behavioural, self-report and experimental measures of message reception.

STUDY DESCRIPTION

The project was designed as a two-stage exploratory EEG investigation and included sixteen adults in total. Stage 1 involved ten participants, five women and five men, aged between 21 and 34 years ($M = 26.8$; $SD = 3.9$), and served to assess procedural feasibility. All participants in both stages were right-handed native speakers of Polish, with no history of neurological or psychiatric disorders, as confirmed by a brief screening interview. Inclusion criteria included no psychotropic medication use in the preceding six months, no current symptoms of depression as indicated by a BDI-II score below 10 (Beck et al., 1996), and normal or corrected-to-normal vision.

Stage 1 evaluated recruitment, screening, stimulus comprehension, participant tolerance, attention checks and the practicability of EEG recording during exposure to expert messages. It was not designed to test the neutral–affective contrast inferentially. Stage 2 provided the basis for the descriptive EEG analysis reported in this article and included six adult participants, four women and two men, aged between 28 and 40 years, each contributing one documented participant-level spectrum for each condition. The available Stage 2 export documented condition-level spectral indices but did not constitute a full trial-level dataset. Consequently, the Stage 2 spectra are used to describe the direction and magnitude of the neutral–affective contrast, not to test statistical hypotheses or estimate stable effect sizes.

Before EEG recording in Stage 1, participants completed a structured interview assessing personal values and socio-political orientations. The interview explored views on individual liberty, the role of the state in the economy, social value hierarchies and sources of moral authority. Six participants identified with liberal-democratic values, two with conservative orientations and two with centrist positions. These declarations are reported only as contextual information. They were not used for subgroup analysis, and ideological orientation is not treated as a moderator of the EEG results.

Two expert messages concerning inflation served as stimuli. The neutral version was linguistically precise, based on statistical indicators and economic metrics, and used a technical, institutionally formal register. The affective/rhetorical version used a more colloquial, metaphorical and evaluative style, including anecdotes, humour, figurative comparisons and source-related cues associated with a publicly recognised right-wing conservative public figure. The original stimuli were presented in Polish. Representative excerpts are provided below to document the linguistic and rhetorical contrast between the materials.

The two stimuli differed not only in affective tone but also in rhetorical density, metaphor use, humour, anecdotal structure, institutional formality, source salience and ideological recognisability. Therefore, the observed EEG differences cannot be attributed uniquely to affective framing or ideological content. The comparison should be understood as a contrast between two ecologically distinct modes of expert communication: a formal institutional message and a rhetorically salient public message.

A pilot validation of the materials was conducted with an independent sample of 25 raters. Stimuli were evaluated on seven-point Likert scales assessing ideological bias, emotionality, linguistic precision and perceived manipulateness. The neutral message was expected to score low on ideological bias, emotionality and manipulateness and high on precision, whereas the affective/rhetorical message was expected to score higher on ideological salience and emotionality and lower on linguistic precision. Where multi-item dimensions were used, internal consistency was high (Cronbach's $\alpha \geq .85$); single-item dimensions were interpreted descriptively. The validation confirmed a clear contrast between the two message types, although the use of a single exemplar per condition remains a major limitation.

Box 1. Representative excerpts from the stimulus material

Condition	Feature	Original excerpt	Analytical function
Affective/ rhetorical	Mountain/plateau metaphor	„Inflacja sięgnęłaby szczytu Giewontu (...) płaskowyż (...) strome podejście (...) z górki dolki (...) potem płaskowyż się kończy, znów stromym zejściem idziemy.”	Inflation is described through vivid landscape imagery, increasing emotional salience.
Affective/ rhetorical	Medical metaphor	„Dostajemy ten zastrzyk penicyliny czy czegoś w pupę, to boli (...) ale chyba ma nam pomóc.”	Economic measures are framed as painful but necessary treatment.
Affective/ rhetorical	Everyday anecdote	„Chleb najtańszy 5 zł kosztuje (...) normalnie żona robi zakupy, dlatego paragon wziąłem.”	A personal shopping anecdote creates immediacy and familiarity.
Neutral/expert	Institutional mandate	„Podstawowym zadaniem NBP jest utrzymanie stabilnego poziomu cen, dbamy o wartość polskiego pieniądza.”	The central bank's statutory role is defined in a formal register.
Neutral/expert	Monetary policy/ liquidity	„Dzięki bezprecedensowym działaniom polityki pieniężnej została zachowana płynność w systemie bankowym i utrzymana stabilność rynku finansowego.”	Technical economic terminology is used without anecdotal framing.
Neutral/expert	Systemic risk	„Do ustawowych zadań NBP należy także działanie na rzecz stabilności systemu finansowego i ograniczania ryzyka systemowego.”	The passage emphasises legal and systemic functions.

Note. The excerpts were not treated as separate experimental trials. They document the linguistic and rhetorical contrast between the two stimulus materials and clarify the stimulus manipulation.

Stimulus presentation order was counterbalanced across participants. Each message was preceded by a brief contextual summary to standardise

comprehension. After each message, participants completed attention and comprehension checks. The procedure took place in a sound-attenuated, dimly lit room, with participants seated comfortably and instructed to minimise movement and blinking. The offsets reported in the EEG export refer to the Grand Average report structure and should not be interpreted as indicating a fixed presentation order across all participants.

EEG recordings were obtained using a Mitsar-EEG 202 system with 19 electrodes arranged according to the international 10–20 system. Reference electrodes were placed on the earlobes, and impedance was maintained below 5 k Ω . The signal was sampled at 500 Hz and band-pass filtered between 0.5 and 40 Hz. The Stage 2 analytic subset contained six participant-level spectra per condition in the neutral and affective/rhetorical Grand Average reports. The neutral condition was represented by a Grand Average segment with offset 76.61 s and length 253.78 s, whereas the affective/rhetorical condition was represented by a segment with offset 390.41 s and length 314.14 s. Because the segments differed in duration, the spectral values are interpreted as software-derived condition-level indices rather than directly comparable as raw power estimates. Future studies should use duration-matched stimuli or matched analysis windows.

The spectral values analysed in the study were software-derived processed spectral indices. In the contrast table generated by the software, the comparison was computed as neutral minus affective; therefore, negative contrast values indicate higher spectral indices in the affective/rhetorical condition. To avoid ambiguity, the manuscript refers to these outcomes as spectral power indices and does not treat them as unprocessed raw power values or inferential test statistics.

Spectral indices were analysed in the theta (4–7 Hz), alpha (8–12 Hz), beta2 (20–30 Hz) and delta (0.5–4 Hz) bands at predefined sites Fz, Pz, T7 and F8. Band labels follow the EEG software export nomenclature. Because the export reports software-derived band indices together with dominant frequencies, the displayed frequency value should not be interpreted as re-defining the nominal band boundaries. The ROIs were selected a priori for exploratory purposes on the basis of their functional relevance to the research question: Fz as a frontal midline site potentially sensitive to cognitive control and conflict-related processing; Pz as a parietal site associated with attention allocation and stimulus evaluation; T7 as a left temporal site relevant to language and semantic processing; and F8 as a right frontal site potentially sensitive to affective and motivational salience. Given the limited montage and small sample, this ROI selection should be regarded as theoretically

motivated but preliminary. The procedure was approved by the university ethics committee. Participant risk was classified as minimal, psychological well-being was monitored, and data were anonymised and stored in accordance with GDPR requirements. The consent form informed participants of potentially political content and emphasised their right to withdraw at any point without penalty. To minimise expectancy effects, the study hypothesis was partially masked, although no deception concerning key procedural elements was used. After completion, participants received a structured debriefing explaining the study aims, the nature of the stimulus contrast and available psychological support resources. The study was conducted in accordance with the Declaration of Helsinki (World Medical Association, 2013) and the APA Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2017).

STAGE 2 DETAILED EEG SPECTRAL ANALYSIS

Stage 2 addressed the descriptive comparison between the neutral and affective/rhetorical conditions. The analysis was based on the available Grand Average spectral exports and included six documented participant-level spectra per condition. The results are reported as condition-level spectral indices and should not be interpreted as inferential participant-level statistics.

The affective/rhetorical condition showed higher spectral power indices than the neutral condition across selected frontal, temporal and parietal sites. The strongest descriptive contrasts were observed in delta indices at F8 and Pz, followed by theta indices at T7, F8, Pz and Fz. This pattern is compatible with stronger cognitive-affective engagement during exposure to the rhetorically salient expert message, but it does not identify the underlying psychological mechanism.

Because the original software contrast was computed as neutral minus affective, negative exported values indicate higher indices in the affective/rhetorical condition. For readability, the table below presents the contrast as affective minus neutral. No ANOVA, paired-sample tests, subgroup comparisons, FDR correction or effect-size estimates are reported, because the available export does not constitute a full trial-level dataset and does not contain the complete preprocessing and spectral-estimation metadata required for confirmatory EEG analysis.

Self-declared worldview was retained only as contextual information from the feasibility stage. The Stage 2 subset does not support reliable analysis of ideological orientation as a moderator. Therefore, the reported findings should be read as a preliminary descriptive contrast between two modes of expert communication, not as evidence of ideological congruence, psychological reactance or motivated reasoning.

Table 1. Descriptive comparison of documented Stage 2 Grand Average spectral indices in selected ROIs (n = 6 participant-level spectra per condition).

ROI / band	Neutral Grand Average	Affective Grand Average	Affective – Neutral
Fz delta	1.548	1.810	+0.262
Fz theta	0.835	1.127	+0.292
Fz alpha	0.591	0.794	+0.203
Fz beta2	0.508	0.578	+0.070
F8 delta	2.471	5.383	+2.912
F8 theta	1.205	1.928	+0.723
F8 alpha	1.065	1.558	+0.493
F8 beta2	1.530	1.656	+0.126
T7 delta	1.778	2.298	+0.520
T7 theta	0.893	1.722	+0.829
T7 alpha	1.012	1.169	+0.157
T7 beta2	1.604	1.950	+0.346
Pz delta	1.558	3.768	+2.210
Pz theta	0.923	1.398	+0.475
Pz alpha	0.951	1.092	+0.141
Pz beta2	0.605	0.634	+0.029

Note. Values are software-derived spectral power indices from the Stage 2 Grand Average export. They are reported descriptively and are not inferential test statistics.

EXPLORATORY QUANTITATIVE SUMMARY

The quantitative summary reports the largest descriptive condition-level differences observed in Stage 2. The clearest pattern concerned higher delta and theta indices in the affective/rhetorical condition. These values may reflect increased attention allocation, semantic integration, affective salience, source-related processing or broader cognitive-affective load. However, because psychological reactance, counterarguing and perceived autonomy

threat were not directly measured, the EEG pattern cannot be interpreted as evidence of any single psychological mechanism.

Table 2. Largest descriptive differences in the affective/rhetorical condition and export-level methodological notes from Stage 2 (n = 6).

Item	Value / status	Interpretive use	Limitation
Neutral Grand Average	Offset 76.61 s; length 253.78 s; six spectra	Documented neutral reference condition	Not a full trial-level dataset
Affective Grand Average	Offset 390.41 s; length 314.14 s; six spectra	Documented affective/rhetorical condition	Not separated from source, prosody or stimulus identity
Largest delta differences	F8 +2.912; Pz +2.210	Most pronounced descriptive contrast	No inferential significance claimed
Largest theta differences	T7 +0.829; F8 +0.723; Pz +0.475; Fz +0.292	Compatible with stronger cognitive-affective engagement	Not specific to reactance
Contrast direction	Original software contrast: neutral minus affective	Negative exported values indicate affective > neutral	Table reports affective – neutral for readability
Supplementary outputs	Power maps, asymmetry maps, coherence summaries	Descriptive/contextual only	Not used as inferential outcomes

Note. The table summarises export-level metadata and the largest descriptive Grand Average differences. It should not be interpreted as inferential evidence or as a participant-level statistical analysis.

DISCUSSION

The present two-stage exploratory study showed that, in the Stage 2 EEG subset, the affective/rhetorical expert message was associated with higher spectral power indices than the neutral institutional message. The strongest descriptive contrasts were observed in delta indices at F8 and Pz and in theta indices at T7, F8, Pz and Fz. This pattern indicates that the rhetorically salient message was processed with stronger condition-level spectral activity across selected frontal, temporal and parietal sites.

A plausible interpretation is that affective and rhetorical density increased cognitive-affective engagement during message reception. Metaphorical language, evaluative tone, humour, anecdotal structure and source-related cues may have intensified attention allocation, semantic integration, affective salience and regulatory processing. In this sense, the findings are consistent with the broader assumption that expert communication is shaped not only by informational content, but also by form, tone and perceived source characteristics.

However, the observed EEG pattern should not be interpreted as evidence of psychological reactance, cognitive defence or motivated reasoning. Spectral EEG indices are not construct-specific. Higher delta, theta or beta-range values may reflect several partially overlapping processes, including attention, arousal, semantic processing, source recognition or cognitive-affective load. Because the study did not include direct behavioural or self-report measures of reactance, counterarguing, perceived threat to autonomy or attitude change, the underlying psychological mechanism cannot be identified on the basis of EEG alone.

The findings should therefore be treated as preliminary and hypothesis-generating. Their main contribution is methodological and conceptual: they show that affectively and rhetorically distinct expert messages can be compared using EEG in a feasible exploratory design, while also indicating the limits of such an approach. Future studies should use larger and balanced samples, multiple matched stimulus exemplars, duration-matched analysis windows, pre-registered preprocessing and direct behavioural measures of message reception. Only such designs will allow researchers to determine whether increased cognitive-affective engagement reflects persuasion, resistance, message fatigue, source effects or other mechanisms of expert communication processing.

PRACTICAL IMPLICATIONS

The findings suggest that emotionally and rhetorically dense expert messages may increase cognitive-affective processing demands during message reception. In public communication, this does not mean that emotional, narrative or metaphorical forms should be avoided. Rather, it indicates that affective salience should be used deliberately, especially in politically or economically sensitive contexts, where rhetorical density may increase engagement but also processing load, source-related appraisal and susceptibility to defensive interpretation.

For expert communication, the central issue is therefore not whether messages should be neutral or emotional, but how affective and rhetorical elements are calibrated. A message that is vivid, metaphorical and personally resonant may attract attention and facilitate comprehension, yet the same features may also intensify evaluative processing when the topic is socially

charged or linked to institutional trust. Emotional communication can clarify and humanise complex information, but excessive rhetorical density may shift reception from analytic processing toward affective, identity-related or source-focused appraisal.

The present study supports a cautious but practically relevant recommendation: expert messages concerning sensitive economic issues should combine clarity, terminological precision and structural coherence with controlled use of affective salience. Emotional and narrative elements may be useful when they support understanding, but they should not obscure the informational structure of the message or increase perceived pressure on the recipient.

Neurocognitive methods such as EEG may contribute to the evaluation of public communication by identifying moments of increased cognitive-affective load. However, they should not be used as standalone tools for diagnosing resistance or persuasion. Their value lies in combination with behavioural, self-report and experimental measures that can clarify whether heightened processing reflects engagement, comprehension, fatigue, resistance or source-related evaluation.

CONCLUSIONS

This two-stage exploratory study provides preliminary descriptive EEG evidence that neutral expert messages and affectively/rhetorically salient expert messages concerning inflation may be associated with different spectral processing patterns. In the Stage 2 analytic subset, the affective/rhetorical condition showed higher Grand Average spectral indices than the neutral condition, particularly in delta and theta ranges at selected frontal, temporal and parietal sites.

These findings are best interpreted as indicators of increased cognitive-affective engagement during reception of rhetorically salient expert communication. They should not be treated as evidence of psychological reactance, cognitive defence or motivated reasoning, because the study did not include direct behavioural or self-report measures of these mechanisms.

The study demonstrates the procedural feasibility of using EEG to examine the neurocognitive processing of expert communication and identifies a promising direction for future research. Larger preregistered studies should

combine EEG with behavioural measures of message reception, use multiple matched stimulus exemplars and apply transparent preprocessing procedures. Such designs will allow future work to determine whether increased cognitive-affective engagement reflects attention, comprehension, persuasion, resistance, message fatigue or source-related evaluation.

DATA AVAILABILITY STATEMENT

The Stage 2 EEG export subset underlying the descriptive tables is available from the corresponding author upon reasonable request, subject to ethical and data-protection constraints. The interpretation is based on anonymised, aggregated EEG indices.

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