Emotional Styles as Determinants of Attitudes towards Linguistic Landscape

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Abstract
This study examines the impact of emotional styles (ES) on attitudes towards linguistic landscape (AtLL), offering a psychological perspective on language perception in public spaces. Relying on data from 103 multilingual participants, we analysed AtLL across their cognitive, affective, and behavioural dimensions. We found significant differences in the intensity of these attitudinal components, with cognitive attitudes being the most prominent. Further, relying on a generalised linear model (GLM), we identified Social Intuition and Sensitivity to Context as predictors of AtLL intensity. This suggests that social and contextual awareness distinctly shape responses to public language use.
Key words: linguistic landscape (LL); attitudes; attitudes towards linguistic landscape (AtLL); emotional styles (ES); Sensitivity to Context; Social Intuition

Introduction

The present study investigates how emotional styles (ES) influence individuals' attitudes towards linguistic landscape (AtLL), thus providing a psychological perspective on language perception in public spaces. While research on emotions and attitudes in applied linguistics has a long-standing tradition, many past investigations relied on the *affect* paradigm, which faced considerable criticism (e.g., Kramsch, 2006). Pavlenko (2005) was among the first who challenged the paradigm, pointing out that accepting it would "reduce emotions to a laundry list of decontextualized and oftentimes poorly defined sociopsychological constructs, such as attitudes, motivation, anxiety, self-esteem, empathy, risk-taking, and tolerance of ambiguity" (p. 34). Our study builds upon this critique by exploring how ES, understood as dispositional traits (Davidson, 2012; Davidson et al., 2018; Kesebir et al., 2019), shape AtLL.

Historically, attitudes have been viewed as responses shaped by environmental variables rather than individual attributes and influenced by external factors, such as the social and cultural context (Baker, 1992). Yet, attitudes are complex constructs, often intertwined with other psychological variables, such as beliefs, values, and stereotypes (Garrett, 2010). This interconnectedness suggests that attitudes can serve as both outcome and predictor variables, influencing and reflecting language behaviours and orientations (Albarracín, 2005; Crookes & Schmidt, 1991). In this vein, we suggest that ES may, to some extent, explain how individuals process and respond emotionally to the linguistic landscape, which constitutes a part of their environment. Our investigation adopts a direct approach to measuring attitudes, which, while potentially susceptible to bias, relies on the benchmarks in applied linguistics (Dörnyei & Dewaele, 2022) to counteract such limitations. First, we seek to understand how individuals differ in their cognitive, affective, and behavioural responses to linguistic landscapes, thus exploring the prominence of the three attitudinal facets. Second, we examine the extent to which specific dimensions of ES, that is, Outlook, Resilience, Social Intuition, Self-Awareness, Sensitivity to Context, and Attention (Kesebir et al., 2019), shape the overall intensity of these attitudes, identifying the emotional characteristics that significantly influence engagement with the linguistic landscape. By unveiling these relationships, we aim to contribute to a more comprehensive understanding of how individual differences in ES shape language-related perceptions of public space.

Emotional styles

In their agenda for investigating emotion in the present century, Fox et al. (2018) assert that since emotion is central in human experience, researchers continue to unveil its biological foundations as well as link it to other psychological processes (such is also the case of the present study, with regard to AtLL). The importance of emotions cannot be overestimated since they impact individuals' behavioural responses and may impinge on their decisions, enhance their memory, and enrich social interactions (Gross & Thompson, 2007). Whereas a number of fundamental aspects of emotion, such as emotion categorisation, the experience vs. perception of emotion, or the role of context, continue to be debated (Barrett et al., 2007), a landmark has been reached in terms of linking emotions to the activity in specific brain circuits (Davidson, 2012). Capitalising on this achievement, the theoretical model by Kesebir et al. (2019) characterises trait differences in emotionality in terms of six constituents:

- *Outlook*, which reflects an individual's ability to maintain positive emotions over time and, through that, foster a generally optimistic attitude in the long run;
- *Resilience*, that is, the capacity to recover quickly from negative emotions, therefore contrasting with Outlook;
- *Social Intuition*, understood as a person's sensitivity to non-verbal social cues, enabling them to interpret others' emotions and respond empathetically;
- *Self-Awareness*, which involves recognising and interpreting one's bodily and emotional signals, providing insight into one's actions and reactions;
- *Sensitivity to Context*, that is, the ability to adjust emotional and behavioural responses based on social cues and context, which, unlike Self-Awareness, involves attentiveness to the external social environment;
- *Attention*, interpreted as the ability to filter out distractions and maintain focus, akin to selective attention, and, while often viewed as cognitive, also suggested to be integral to emotional style because of its relevance to managing emotional distractions is essential for psychological well-being.

In brief, Davidson (2018: 72) describes emotional styles (ES) as "consistent individual differences that modulate the likelihood, timing, intensity, frequency, and form of emotional response to particular incentives". Critically, individual variation in terms of ES involves not merely the extent to which people's emotionality is healthy, but also differences in emotion regulation, coping, or mood regulation (Gross, 2024). Emotional style is also assumed to be a proxy variable for emotion regulation (Hariri & Forbes, 2007). Given the scope of the present paper, we refrain from discussing the specific brain circuits which govern the above dimensions (see Davidson, 2012), and, instead, provide a brief description of how the levels of each manifest in individuals as dispositional traits, based on the recent account in the adaptation of the ESQ used in the present study (Gąsiorowska et al., 2023). To start with, people who score high in Outlook exhibit lasting positive emotions, contributing to overall well-being and optimism, whereas those with low Outlook usually have fleeting positive reactions, leading to pessimistic perspectives and potential risk of depression. Individuals high in Resilience can swiftly return to emotional stability after both minor and major challenges. High Social Intuition, in turn, fosters empathy and compassion, while the low degree of this disposition involves a risk for healthy relationships. Concerning Sensitivity to Context, its low levels may characterise individuals likely to miss social norms, resulting in behaviour perceived as insensitive or inappropriate, while high levels correspond to increased attentiveness to the social environment. Finally, regarding Attention, high scorers in this dimension are skilled at maintaining concentration in environments with multiple competing stimuli, which helps them engage deeply in social interactions, particularly those involving emotional

experiences. At the same time, individuals with low Attention levels may find it challenging to stay focused on tasks or engage meaningfully in social contexts, leading to potential misunderstandings or misinterpretations of emotional cues. Also, the inability to filter out distractions may lead to heightened emotional distress or a diminished ability to connect with others. All in all, taken together, high levels of the six ES dimensions as well as in cumulative scores from the ESQ (Kesebir et al., 2019) correspond to healthy emotionality, whereas low levels are associated with emotional difficulties and potential challenges in psychological well-being and interpersonal relationships.

Attitudes as a research construct

As already mentioned in the Introduction, the notion of attitudes has evolved considerably since its original conception. According to the latter, stemming from the sociolinguistic theory of motivation (Gardner, 1985), attitudes are developed through social interaction and are determined by significant others and institutions (Dörnyei & Ryan, 2015). While we acknowledge the value of this perspective, we aim to present a more comprehensive view of attitudes, one in which attitudes are not merely inseparable from motivation to language learning (Lightbown & Spada, 2021). To this end, we need to start by defining the construct and outlining the mechanisms underlie it and discussing its structure in the present section, then move on to exemplifying the attitudes investigated in applied linguistics research in the following one. Given the scope of our paper, we also review studies related to AtLL in a separate section.

Eagly and Chaiken (1993: 1) define *attitude* as "a psychological tendency expressed by evaluating a particular entity with some degree of favor or disfavor". We form attitudes both online, making snap judgements, and relying on evaluative representations in memory (Abarracin et al., 2005). As outlined by Krosnick et al. (2005), this happens in three stages:

- *Automatic activation*, during which exposure to an entity triggers related memories and evaluations without conscious awareness, and strongly associated evaluations are activated, especially for well-established attitudes;
- *Deliberation phase*, during which individuals move into a controlled, effortful search for relevant information, recalling past experiences and associations, determined by both context and motivation;
- *Response phase*, during which individuals integrate information from the prior stages, relying on explicit awareness (active evaluation) or implicit influences (like subconscious priming) and make choices.

Concerning the structure of attitudes, it is affected by many individual characteristics, such as self-monitoring, and situational moderators, such as time pressure, but principally, attitudes form through experience (Ajzen, 2005). Most relevant to the scope of the present paper is the three-dimensional paradigm of attitudes (Eagly & Chaiken, 1993), which encompasses:

- *the Cognitive Component*, involving beliefs and thoughts that shape how individuals view an entity, associated with it, and based on factual information and/or stereotypes;
- *the Affective Component*, capturing the emotional reactions or feelings that an attitude object triggers, hence severely affecting the very formation of attitudes, and typically anchoring them in personal experience and emotion;
- *the Behavioural Component*, which refers to the ways attitudes influence individuals' actions or intentions, or, in other words, potential predictors of

future behaviour (yet modified in strength by external factors, such as social pressure).

Importantly, Ajzen & Fishbein (2005: 82) point out that "(a)n attitude does not consist of these elements, but is instead a general evaluative summary of the information derived from these bases". Hence, as Eagly and Chaiken (1993) suggest, these components are interrelated, but each may contribute differently depending on the specific attitude and context. This assertion had a direct implication for constructing the research instrument used in the present study (see the Method section and Appendix 1), which contains three scales, each dedicated to a specific component of attitudes. However, before we address the measurement of AtLL in our study, we exemplify how the construct of attitudes has been approached in linguistics in the following section.

Attitudes in applied linguistics studies

As already mentioned in the previous section, while studies investigating attitudes have enjoyed a long presence in applied linguistics, the understanding of the construct and, consequently, the focus of the conducted investigations, have both changed considerably. One of the earliest instruments explicitly addressing attitudes, the Foreign Language Attitude Survey (De García et al., 1976), was designed to tap on language teachers' attitudes and beliefs about foreign language learning and teaching, yet, at the same time, it focused on teacher attitudes, motivation, instructional methods, and assumptions regarding language skills development. Many later investigations of attitudes also merged them with related notions, notably motivation (Gardner, 1985), leading to an increasingly complex, yet still fragmentary picture of the construct. This notwithstanding, several major strands of research into attitudes can be identified in applied linguistics, including investigations of attitudes towards specific dialects, languages, bi- and multilingualism (e.g., Dewaele, 2010), studies into attitudes towards second and foreign language instruction (e.g., Summer et al., forthcoming) or research attempting to link attitudes to various aspects of language proficiency (e.g., Onwuegbuzie et al., 2000). Since this paper examines AtLL, the present section only offers a few examples of research into other areas of attitudes, while the following one addresses AtLL in more detail.

In his insightful exploration of the complex relationships between emotions and language learning, Dewaele (2010) describes attitudes as emotional, cultural, and sometimes political responses that individuals hold towards a language and its speakers. In his view, language attitudes can range from positive or negative feelings about language-specific sounds to people's associations with certain social or cultural values, or perceptions of its utility or prestige. Dewaele (2010) also explains that attitudes are complex and influenced by multiple factors, such as personal experiences, geopolitical contexts, and cultural perceptions. Moreover, he also emphasises that they evolve based on socio-political factors and personal experiences.

Moving on to investigations of attitudes in second/foreign language learning, the results of quantitative studies conducted at the end of the previous century pointed to the impact of positive attitudes on various measures of language learning success (e.g., Gardner, 1985; Onwuegbuzie et al., 2000). In a more recent study, based on responses to the Foreign Language Attitudes and Perceptions Survey (FLAPS; Sparks et al., 1993) from 648 American university students learning Spanish, French, or German), Cochran et al. (2010) linked attitudes to exam grades in the investigated L2s in a structural equation model, also including aptitude as a variable mediating the relationship. Their findings underscore the value of fostering positive attitudes in foreign language learners, as they appear to precede and enhance another learning aptitude and ultimately facilitate language learning attainment. At the same time, a number of studies show that attitudes towards foreign language

instruction tend to be negative and explain that those unfavourable attitudes are caused by both curricular foundations and insufficient learner engagement (Ellis, 2019; Summer et al., forthcoming). In this respect, relying on linguistic landscape as a source of input (Gorter, 2008) and recognising the potential of incidental learning relying on linguistic landscape (Przybył & Wiśniewska, 2024) may hold some promise of improvement.

Attitudes towards linguistic landscape

Linguistic landscape is, as such, a specific social context in which language attitudes are shaped or, once established, reinforced, or challenged, through exposure to or interaction with it. Critically, the construct encompasses more than language itself. The challenges in defining the linguistic landscape and attempts to determine its scope have been widely discussed from different angles (Gorter & Cenoz, 2023). Broadly, linguistic landscape can be understood as an assemblage of verbal, verbal-visual, spatial, and other semiotic artifacts displayed in public space for informational and symbolic purposes (Landry & Bourhis, 1997; Kallen, 2023). Although individuals interact with language-rich environments that both influence and elicit varied responses, studies on the perception of and attitudes towards linguistic landscape remain limited (Gorter, 2023). The need for further research in this area has been emphasised for some time (Dagenais et al., 2009; Pennycook, 2009; Garvin, 2010).

Building on the discussion of attitudes as a research construct, it can be inferred that attitudes towards the linguistic landscape are shaped by individuals' evaluation of particular units within the linguistic landscape, "with some degree of favor or disfavor" (Eagly & Chaiken, 1993: 1). This evaluation arises from the observers' relationship with the linguistic landscape, their modes of engagement with it, and may be influenced by personal experiences, beliefs and knowledge as well as emotions and feelings. Importantly for the attitudinal perspective, defining what constitutes a unit of the linguistic landscape remains unresolved and is partially contingent on individual researchers' decisions. In their recent work, Gorter and Cenoz (2023) identify three main approaches to conceptualising a *unit*: as an individual, framed item, "the larger whole of the establishment" (Cenoz & Gorter, 2006: 71) or, in a broader sense, a larger unit, a landscape (Ben-Rafael et al., 2006). Relying on a selection of studies, the following paragraph attempts to identify how attitudes towards linguistic landscape are perceived and what influences they are subject to.

Research on attitudes towards linguistic landscape is most commonly conducted in multilingual settings where two or more languages of varying status compete in public spaces, often for economic or tourism-related purposes. Consequently, several studies focus on attitudes towards specific languages present in the linguistic landscape rather than the verbal-visual linguistic landscape unit as a whole. For example, Shang (2021) examined attitudes among local residents in Eastern China towards the presence of English in the local linguistic landscape, as well as multilingualism and the inclusion of different Chinese varieties. The study found that residents generally held positive attitudes towards English and "Chinglish", with younger participants showing greater openness to non-standard language varieties. These favourable attitudes towards the multilingual landscape in Eastern China were attributed to a pragmatic economic perspective, aimed at making the region accessible to foreigners. Khosravizadeh and Sanjareh (2011) also studied attitudes towards English in Iranian shop names. The results showed that positive attitudes towards English were, to a certain extent, age-dependent, with younger participants associating English with modernity, prestige, and appeal, while older respondents viewed it less favourably due to their stronger national identity. Similarly, Nofal and Mansour (2014) examined the language of shop names in a Jordanian city

and shop owners' attitudes towards multilingualism. They found that shop owners acknowledged the economic benefits of displaying foreign languages alongside native Arabic, as customers perceived foreign names as reflective of higher socioeconomic status.

Attitudes towards linguistic landscape are not solely influenced by perceptions of the power of a language, as it is often the case with English, or by economic incentives for multilingual signage in urban areas. For example, the study conducted by Yadate (2012) in Jimma, a city in Ethiopia, demonstrates the impact of historical and political factors on attitudes towards linguistic landscape. In this multilingual town, both Amharic and Afan Oromo are official languages. However, Afan Oromo, previously banned and marginalised, is only gradually regaining its status. Despite this revival, the representation of the language in public spaces often contains errors, attributed to both the low education levels of writers, and some prevailing negative attitudes towards Afan Oromo. Specifically, in the study, some Amharic-speaking participants favoured English and justified their negative views toward Afan Oromo by emphasising concerns about national unity and their association of the Amharic script with national identity. Others also expressed a preference for English, citing historical disrespect toward Afan Oromo speakers by Amharic speakers. In another study, in Montreal, Leimgruber and Fernández-Mallat (2021) analysed attitudes towards bilingual, monolingual French, and monolingual English signs. Their findings showed that national identity played a central role in shaping attitudes towards languages in the linguistic landscape. Francophones exhibited strong positive attitudes towards French signs, and moderate approval of bilingual signs if French dominated, whereas Anglophones tended to resist French predominance. In a similar vein, Trumper-Hecht (2010) conducted research in Upper Nazareth, an Israeli mixed city, to examine Arab and Jewish residents' attitudes towards Hebrew and Arabic in the linguistic landscape. Both groups viewed Hebrew positively in commercial contexts, but attitudes towards Arabic were contentious, and even public authorities were hesitant to include Arabic on public signage. These findings underscore the influence of political dynamics on attitudes towards linguistic landscape and highlight the emotional responses generated by such contexts. Another study in which the influence of political events and past experiences played a significant role in shaping attitudes towards linguistic landscape investigated Palestinians' views on Hebrew (Ujvari, 2019). It was found that attitudes depended on the area under investigation. Palestinians living in regions where Hebrew was absent in the linguistic landscape held negative attitudes towards Hebrew because they associated the language with the Israeli occupation. Conversely, Palestinians living in a region with Hebrew present in the environment, in shops and road signs, held positive attitudes.

The role of exposure to language in shaping attitudes towards linguistic landscape is also visible in a study that investigated students' attitudes towards Frisian, Dutch, and English in the province of Fryslân (Duarte et al., 2023). An intriguing finding was the contrast between moderate attitudes towards the Frisian language generally and more positive attitudes towards the presence of Frisian in the linguistic landscape. The authors suggested that the limited visibility of Frisian in public spaces contributed to this discrepancy, as infrequent exposure created a sense of novelty and appeal. Respondents also indicated a preference for English over Dutch. It was suggested that the presence of less common languages in a given linguistic landscape could raise awareness of these languages and potentially alter public attitudes to be more positive. Correspondingly, Lei and Liyuan (2024) explored the relationship between residents' attitudes in Guilin, a popular tourist destination in China, towards multilingual signage and the motivations behind these attitudes. No strong associations were found between residents' identity, age, and attitudes towards different languages in the landscape. These attitudes, however, were influenced by a

strong sense of local identity and inclusiveness, as well as limited proficiency in foreign languages – factors which were assumed to restrict the development of a diverse multilingual landscape. Apart from ideological influences and participants' beliefs about languages, pragmatic approaches to the linguistic landscape affect attitudes, as shown in a study conducted in the German Ruhr Area, where positive attitudes towards language diversity stemmed from the consideration of multilingual signage as a facilitator of communication (Ziegler et al., 2019).

The above brief overview of linguistic landscape research underscores the diverse factors that significantly impact attitude formation, including age, education, language skills, economics, pragmatism, social or national identity, and emotional influences. Further studies may expand upon this scope. Notably, the studies discussed focus predominantly on languages in the linguistic landscape, prioritising the verbal over the visual and spatial aspects, which are also relevant in shaping linguistic landscapes and likely influence attitudes towards them. The study presented in the following sections was conducted in a context that differs from those discussed thus far: an environment with a single official language, yet with significant English presence, and limited visibility of other foreign languages, as reflected in the linguistic landscape. The specificity of our context inclined us to look for the determinants of attitudes towards linguistic landscapes in the individual characteristics of those who are exposed to it, one of which is emotional styles. Moreover, while we subscribe to Cenoz and Gorter's (2008) view that "(t)he linguistic landscape can be included in studies of language attitudes and identity as related to SLA in different contexts" (p. 284), we also believe that attitudes towards linguistic landscape can be investigated as an output variable in empirical investigations of their determinants. On this basis, we aim to answer the following research questions in the present study:

RQ 1: *What are participants' attitudes towards linguistic landscape (AtLL) in terms of their cognitive, behavioural, and affective involvement?* and
RQ 2: *How do emotional styles (ES) affect the intensity of AtLL?*

Method

Participants

Participants in the study were 103 students of applied linguistics at a state-owned university in western Poland, mostly women (78%), speakers of L1 Polish, L2/L3 English/German, and L4 French/Italian/Russian/Spanish, aged 19-25 (M = 21, SD = 1), whose self-reported proficiency levels in reading comprehension in L2/L3 English/German amounted to 8.94/10 and 7.1/10 respectively. Participation in the study was voluntary, and students who decided to take part were compensated with bookshop vouchers.

Data collection instruments

The present study constitutes a part of a larger research project exploring the role of emotions in the reception of and response to street art (ERRSA). Given the scope of the present paper, we only discuss the research instruments used to measure participants' emotional styles (ES) and their attitudes towards linguistic landscape (AtLL). Concerning ES, the Polish adaptation of the ESQ (Kesebir et al., 2019) by Gąsiorowska et al. (2023) was used in the present study. All four scales of the ESQ were characterised by sufficient internal reliability, as demonstrated by the Cronbach's alpha coefficient values for Outlook (α_o = .70), Resilience (α_R = .72), Social Intuition (α_{SI} = .76), Self-Awareness (α_{SA} = .72), Sensitivity to Context (α_{SC} =.72), and Attention (α_o = .74). The validity of the inventory was put to a test by calculating bivariate item-total correlations between each item score and scale score, checking their significance, and juxtaposing the value with critical values for df = 101.

Each time, the correlation coefficient exceeded the critical value, and the *p* value was lower than .05.

Concerning participants' attitudes towards linguistic landscape (AtLL), following an extensive literature review and a series of interviews with a nested sample of the participants in the ERRSA project, we constructed a 27-item inventory to measure the intensity of participants' psychological reaction to linguistic landscape. As already mentioned in the section on Attitudes, our inventory contains items accounting for the three dimensions of attitudes, that is, their cognitive (C), behavioural (B), and affective (A) components. Sample items include: *I pay attention to texts because of their aesthetics* (C2), *I pass by most texts without paying attention to them* (C4; reversed); *I look for interesting elements of linguistic landscape* (B1); *If I am interested in a text, I look for its genesis* (B7); *I am moved by texts which I disagree with* (A2); *I remain indifferent to the linguistic landscape* (A4; reversed). Each of the scales had a satisfactory reliability, as indicated by the Cronbach's alpha values of α_C = .71 for the Cognitive scale, α_B = .86 for the Behavioural scale, and α_A = .84 for the Affective scale. Also, the procedure we conducted to account for the validity of AtLL, which reflected the one discussed for the ESQ (Kesebir, 2019), supported the robustness of the constructs measured by the AtLL. The instrument can be found in Appendix 1 at the end of this paper.

Analytical procedures

To answer RQ 1, we conducted Friedman's ANOVA to examine the differences across the three constituents of attitudes towards linguistic landscape. The choice of the procedure was dictated by comparing measures where each participant had scores on multiple scales (in this case, Cognitive, Behavioural, and Affective). Following this, we performed pairwise comparisons using the Durbin-Conover test as post-hoc test to identify specific differences between each pair of attitudinal dimensions. Descriptive statistics, including mean and median scores, were also computed for each scale.

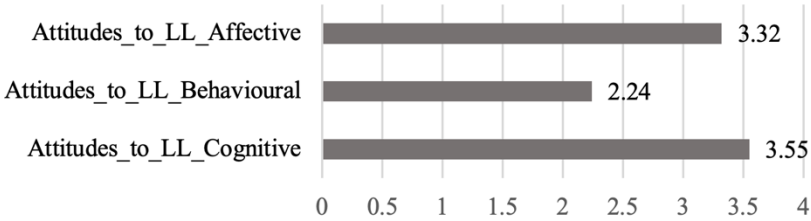
In response to RQ2, we developed a generalised linear model (GLM) to examine the relationships between the dimensions of the ESQ (Kesebir et al., 2019) and AtLL. The gamma distribution was appropriate for the skewed continuous data of both predictors and the outcome variable. The predictors included six dimensions of ES, that is, Outlook, Resilience, Social Intuition, Self-Awareness, Sensitivity to Context, and Attention, while the outcome variable was AtLL intensity, computed as a sum of means for the three attitude scales, Cognitive, Behavioural, and Affective. The GLM was estimated using the maximum likelihood estimation, with the Log link function, and assessed based on the values of the R-squared, AIC, BIC, deviance, and chi-squared/*df* which it returned. R-squared was interpreted as the proportion of error reduction due to the model. All calculations were performed in jamovi (The jamovi project, 2023).

Results

Regarding RQ1, Friedman's ANOVA revealed statistically significant differences among the three attitudinal dimensions, $\chi^2(2) = 119$, $p < .001$, indicating that participants' AtLL differed in strength across the cognitive, behavioural, and affective domains. Pairwise comparisons with the Durbin-Conover test indicated a significant difference between cognitive and behavioural attitudes ($D = 15.92$, $p < .001$), with more stronger cognitive attitudes, a significant difference between cognitive and affective attitudes ($D = 3.60$, $p < .001$), also in favour of cognitive attitudes, and a significant difference between behavioural and affective attitudes ($D = 12.32$, $p < .001$), with affective attitudes scoring higher than behavioural attitudes. In sum, these results suggested that Cognitive AtLL were the most prominent, followed by Affective AtLL, with Behavioural AtLL being the least intense. This distribution

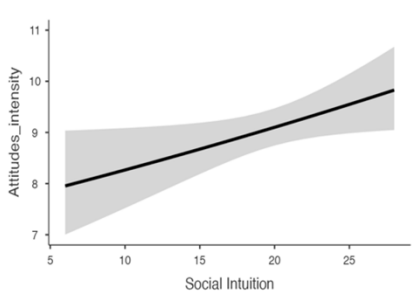
highlights a potential hierarchy in how participants engage with LL across different attitudinal dimensions. The mean values are presented in Figure 1.

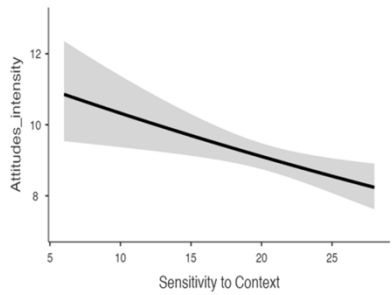
Fig. 1. Intensity of attitudes towards linguistic landscape.



With respect to RQ2, the model, which successfully converged, showed an R-squared value of 0.1448, indicating that approximately 14.5% of the variability in Attitudes Intensity was explained by the predictors. The AIC (425.25) and BIC (446.33) values supported our model selection, while a chi-squared/*df* ratio, 0.0414, indicated limited overdispersion. Social Intuition was positively associated with AtLL intensity (Estimate = 0.00961, p =.032), indicating that higher levels of Social Intuition were related to greater intensity in AtLL. At the same time, Sensitivity to Context was negatively associated with AtLL (Estimate = -0.01255, p = .005), suggesting that higher Sensitivity to Context reduced AtLL intensity. Outlook, Resilience, Self-Awareness, and Attention did not significantly correlate with attitudes intensity (all *p*s> 0.05). Overall, the GLM identified Social Intuition and Sensitivity to Context as significant predictors, implying that the ability to interpret social cues and contextual responsiveness both shape the intensity of attitudes. The associations showed different directions: the first was positive, while the second was negative. Figures 2 and 3 illustrate the relationships for Social Intuition and Sensitivity to Context with 95% confidence intervals (CI).

Fig. 2. Social Intuition increases AtLL intensity. Fig. 3. Sensitivity inhibits AtLL.





Discussion

The outcomes of our study underscore the distinct ways in which attitudes towards linguistic landscape (AtLL) are formed across cognitive, affective, and behavioural dimensions. With respect to RQ1, we found that participants' cognitive engagement with LL was the most pronounced, slightly surpassing their affective involvement,

and substantially outpacing their behavioural commitment. This finding aligns with the results of an investigation into how multilinguals self-regulate in the use of LL, which revealed that multilinguals tend to rely on it as a source of language input, underlying the use of language learning strategies (Przybył & Wiśniewska, 2024).

As far as RQ2 is concerned, the identification of Social Intuition and Sensitivity to Context as significant predictors of AtLL insensitivity offers insights into the complex interplay between social and contextual factors in shaping AtLL. The positive association with Social Intuition suggests that individuals who are adept at interpreting social cues tend to have stronger AtLL because they become more emotionally engaged with it. Conversely, the negative association with Sensitivity to Context indicates that heightened contextual awareness may temper this intensity, confirming that a strong reaction to a contextual entity, such as LL, is an indication of an overreactive emotionality (cf. Davidson, 2018). More generally, our findings also indicate that attitudes towards language, including those related to the language in public space, are not merely cognitive assessments, but also formed as emotional responses (Dewaele, 2010), and shaped not only by cultural or geopolitical factors, but also personal characteristics.

While some previous studies, such as the one conducted by Nofal and Mansour (2014), attribute considerable causality to the linguistic landscape that individuals are exposed to, and conclude that it may shape attitudes, and even affect everyday decisions, ours looks at LL as an output variable. In this vein, we argue that individuals who exhibit high Sensitivity to Context, may be less susceptible to the content of linguistic landscape around them. To some extent, this aligns with Gorter and Cenoz's (2023) work, which suggests that AtLL are multifaceted and may change depending on situational dynamics as well as other factors. Our results show that highly context-sensitive individuals are likely to exhibit relatively less polarised reactions. Overall, our findings may also indicate that ES, and, critically, sensitivity to social and contextual cues, may help individuals navigate through linguistic landscapes. This type of adaptability could also potentially denote a broader capacity to manage emotions in complex public spaces, where language functions not only as a communicative tool, but also as a marker of identity and cultural affiliation (Gorter & Cenoz, 2017). Building on these observations, further research could investigate the extent to which context sensitivity mediates other affective reactions to linguistic landscapes.

The results presented in this paper should be interpreted in light of several limitations. First, our participants all belonged to a specific cohort of young adults, undergraduate students learning multiple languages. Therefore, our findings cannot be generalised, particularly to other cultural, social, or demographic contexts. Another limitation relates to the research settings, as the data for the study was collected off-site, in a classroom, where participants completed the survey without prior, explicit exposure to linguistic landscape. This limitation was partially addressed in a subsequent qualitative follow-up study (forthcoming), in which participants responded to prompts derived from real-life linguistic landscapes. Finally, the use of self-reported measures presents a potential for response bias, particularly in cases where participants may struggle to select answers that accurately reflect their opinions, beliefs, emotions, or experiences. While both instruments applied in the present study met the goodness criteria for psychometric tests (Hornowska, 2022), data and method triangulation in further studies, also consisting in applying measures relying on galvanic skin response or electroencephalography, seem inevitable in order to account for the complex relationships between individuals' emotional styles and their attitudes towards linguistic landscape. Moreover, in light of the recent findings in the field of multilingual emotional advantage (Dekeyser et al., 2024), the rationales for upcoming studies should also address differences in responses to linguistic landscape across mono-, bi-, and multilinguals.

Appendix 1

Attitudes to Linguistic Landscape Inventory (AtLLI), 2025
Instruction: For each statement, decide how much it is true for you
(1 – completely untrue; 5 – completely true)

AtLL – C
C1. I pay attention to texts that intrigue me.
C2. I pay attention to texts because of their aesthetics.
C3. I pay attention to texts that evoke my emotions.
C4. I pass by most texts without paying attention to them (reverse item).
C5. I pay attention to texts that I disagree with.
C6. I pay attention to texts that I identify with.
C7. I wonder who the author of the text is.
C8. I wonder about the purpose of the text.
C9. Texts allow me to form opinions about events.
C10. Texts help me become aware of my personal and group emotions.

AtLL – B
B1. I look for interesting elements in the linguistic landscape.
B2. I document examples of the linguistic landscape.
B3. I express my opinion about texts.
B4. I talk about emotions related to the texts.
B5. I report acts of vandalism that spoil the linguistic landscape
B6. I add comments to the texts accessible to me.
B7. If I am interested in a text, I look for its genesis.
B8. I browse websites with LL.
B9. I post LL photos online.
B10. I comment on the linguistic landscape online.

AtLL – A
A1. I believe that texts positively enrich the linguistic landscape.
A2. I am moved by texts which I disagree with.
A3. Texts spark my desire to discuss the topics they address.
A4. I remain indifferent to the linguistic landscape.
A5. I feel various emotions about texts present in the linguistic landscape
A6. Some texts make me feel down.
A7. Some texts have a positive effect on my mood.

Scores should be calculated as mean scores for each subscale of Cognitive (C), Behavioural (B), and Affective (A) attitudes. Adding the three mean scores accounts for an overall intensity of a person's attitudes to the linguistic landscape (AtLL).

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