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DIGITAL CULTURE, BORDER HERITAGE AND YOUTH IDENTITY: A CULTURAL SYMBOLS-CENTRED PRACTICE-BASED AUDIOVISUAL MODEL FOR ETHNIC MINORITY YOUTH IN CHINA

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ABSTRACT

This article examines how Cultural Symbols (C) can support digital border heritage communication and youth identity formation among ethnic minority youth in China's Guangxi border region. It presents a focused analysis of border heritage, symbolic meaning and youth reception within a broader practice-based audiovisual research project. In this study, border heritage is understood not as a static collection of monuments or local customs, but as a living cultural memory system shaped by oral histories, ethnic identity symbols, ritualized spaces and border geographies. A practice-based audiovisual prototype was developed through contextual field inquiry, expert consultation and a six-episode short-video production process. The article reports three main evidence sources: a fixed-sample pre-post audience test with 50 youth viewers, a post-viewing diagnostic of Cultural Symbols (C), and selected expert evaluation by 12 specialists. The analysis centres on five variables: Cultural Symbols (C1 Local cultural elements), Cultural Symbols (C2 Symbolic Meaning (Symbolism)), Cultural Symbols (C3 Ethnic identity symbols), Cultural Symbols (C4 Historical Memory) and Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)). Results show that Cultural Symbols (C4 Historical Memory) ranked highest in audience perception (M = 4.68), followed by Cultural Symbols (C2 Symbolic Meaning (Symbolism)) (M = 4.66), Cultural Symbols (C1 Local cultural elements) (M = 4.62) and Cultural Symbols (C3 Ethnic identity symbols) (M = 4.60). The findings suggest that living memory, local recognizability, symbolic meaning and spatial border symbols are central to culturally sensitive digital heritage communication. The article contributes a Cultural Symbols (C)-centred practice-based model for translating border heritage into youth-oriented audiovisual communication.

KEYWORDS: Digital Culture, Border Heritage, Cultural Symbols, Intangible Heritage, Youth Identity, Ethnic Minority Youth, Audiovisual Authenticity, Cultural Memory.

1. INTRODUCTION

Digital media has become a major environment in which young people encounter, interpret and circulate cultural meanings. In border ethnic minority regions, this process is especially significant because cultural identity is experienced through local landscapes, ethnic traditions, oral memories, border spaces and platform-based media practices. Short video does not merely distribute information. It reshapes how cultural symbols are selected, narrated, visualized and emotionally received by young audiences.

For this reason, the present article focuses on border heritage as a living cultural memory system rather than as a static collection of monuments or decorative local customs. In this article, border heritage refers to the cultural meanings carried by local scenes, ethnic identity symbols, oral histories, ritualized spaces and border geographies. This understanding is consistent with the view that culture is made meaningful through symbolic interpretation (Geertz, 1973), representation (Hall, 1997) and repeated forms of memory (Assmann, 2011). It also resonates with the UNESCO (2003) definition of intangible cultural heritage as practices, representations, expressions, knowledge and skills transmitted across generations.

China's Guangxi border region provides a meaningful context for this discussion. The region contains multiple ethnic communities, border trade spaces, national gates, boundary markers, historical routes and everyday local cultural practices. For youth aged 18-25, these cultural resources are increasingly encountered through digital media and short-video platforms. However, there remains a practical gap between rich border cultural resources and the methods used to convert them into culturally sensitive digital communication.

The present article focuses specifically on the cultural-symbolic reception layer of a broader practice-based audiovisual research project. It examines how digital culture, border heritage, Cultural Symbols (C) and youth identity can be connected through focused empirical and practice-based analysis. Broader audience ecology and platform-performance indicators are treated only as contextual or supplementary evidence, allowing the discussion to remain centred on how border heritage resources are translated into youth-oriented audiovisual communication. In this way, the article concentrates on the role of Cultural Symbols (C) as a key mechanism for linking living memory, symbolic meaning, local recognizability and border geocultural space with youth reception.

The central argument is that Cultural Symbols (C) should not be treated as visual decoration. They are practice-based design variables that can be selected, filmed, edited, evaluated and refined. The article examines five Cultural Symbols (C) variables: Cultural Symbols (C1 Local cultural elements), Cultural Symbols (C2 Symbolic Meaning (Symbolism)), Cultural Symbols (C3 Ethnic identity symbols), Cultural Symbols (C4 Historical Memory) and Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)). These variables are evaluated through youth reception data, selected expert review and limited supplementary platform observation.

The objective of the article is to explain how a Cultural Symbols (C)-centred audiovisual model can support border heritage communication and youth identity formation. Specifically, the article asks: which Cultural Symbols (C) variables are most strongly perceived by youth viewers; how these variables relate to Cognition (Cog), Affect (Aff) and Behavior (Beh) outcomes; and how a practice-based model can support culturally sensitive digital heritage communication in border contexts.

2. THEORETICAL BACKGROUND

2.1. Border Heritage as living Cultural Memory

Border heritage is often associated with visible places such as gates, routes, ports, monuments and boundary spaces. However, its significance is not limited to material objects. Border heritage also includes remembered stories, embodied practices, local identities, ritual actions and the everyday experience of living in a frontier region. Assmann (2011) argues that cultural memory is sustained through symbolic forms and repeated acts of remembrance. From this perspective, border heritage becomes meaningful when local memory is activated through image, sound, narrative and shared interpretation.

UNESCO (2003) emphasizes that intangible cultural heritage includes practices, representations and expressions transmitted across generations. This is important for the Guangxi border context because many border meanings are not preserved only in monuments, but in oral histories, local customs, ethnic identity codes, ritual spaces and everyday practices. Therefore, a digital heritage communication model must pay attention to both visible signs and lived meanings.

The notion of identity also requires careful handling. Brubaker and Cooper (2000) warn against treating identity as a fixed and self-evident category. Bhabha (1994) similarly emphasizes cultural

hybridity and in-between spaces. These perspectives are useful for border ethnic minority contexts, where youth identity is shaped by local ethnic belonging, regional memory, national-cultural narratives and digital media participation. In this article, youth identity is not understood as a fixed label. It is treated as an interpretive process supported by culturally meaningful symbols and audiovisual experience.

Anderson (1991) argues that communities are imagined through shared narratives, symbols and media forms. In a border context, digital short video may help young viewers imagine cultural belonging by connecting local experience to broader communities of memory. However, this connection is effective only when the symbols are credible, recognizable and emotionally meaningful.

2.2. Cultural Symbols (C) as a focused Variable System

Cultural Symbols (C) are the core of this article. Semiotic theory explains why symbols matter in cultural communication. Barthes (1977) shows that images carry denotative and connotative meanings. Hall (1997) argues that representation is a process of meaning-making shaped by cultural codes. In the present study, Cultural Symbols (C) are defined as culturally embedded sign resources that carry local identity, historical memory, symbolic value and spatial meaning.

The model uses five Cultural Symbols (C) variables. Cultural Symbols (C1 Local cultural elements) refers to recognizable hometown cues, landscapes, everyday objects, local architecture, rituals and community scenes. Cultural Symbols (C2 Symbolic Meaning (Symbolism)) refers to symbolic meaning embedded naturally in narrative and place, rather than imposed through slogan-like presentation. Cultural Symbols (C3 Ethnic identity symbols) refers to identity codes connected with ethnic cultural expression, such as local practices, clothing, language, ritual gestures or symbolic customs.

Cultural Symbols (C4 Historical Memory) refers to oral histories, intergenerational memory, commemorative moments and historical anchors. It connects present-day youth experience with remembered border history. Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)) refers to border gates, ports, routes, boundary lines and spatial symbols that transform border geography into identity meaning. Together, these five variables form a Cultural Symbols (C)-centred approach to digital border heritage communication.

Although the broader audiovisual model also

includes Digital Narrative (D) and Audiovisual Semiotics (S), this article treats them mainly as supporting design controls. Digital Narrative (D4 Authenticity (highest priority)) supports the credibility of Cultural Symbols (C) by requiring real people, real scenes and non-staged representation. Audiovisual Semiotics (S4 Visual Authenticity) supports the same aim through documentary texture, natural light and visual realism. In other words, the focus is Cultural Symbols (C), while Digital Narrative (D) and Audiovisual Semiotics (S) serve as credibility and presentation supports.

2.3. Digital Communication, Youth reception and Practice-based Evidence

Digital cultural communication is shaped by platform form, participatory culture and audiovisual design. Manovich (2001) argues that new media has specific cultural forms and logics. Jenkins (2006) describes contemporary media culture as participatory, while Jenkins et al. (2009) emphasize the cultural competencies required for meaningful participation. Short-video platforms intensify these processes because they compress narrative, accelerate rhythm and encourage visible interaction.

Studies of short-video culture show that platform affordances influence communication style and youth engagement. Kaye et al. (2021) analyse the platformization of Douyin and TikTok, while Zeng et al. (2021) situate TikTok and its legacy apps as significant objects of social media research. Chen et al. (2021) show that Douyin can combine affect, entertainment and public communication. In the present article, however, platform data are not used as the central evidence. They are used only as supplementary ecological context, because the main research focus is cultural-symbolic reception rather than platform performance.

Practice-based research provides the methodological basis for connecting creative production with evidence. Candy and Edmonds (2018) argue that creative artefacts can generate knowledge when their processes and outcomes are documented and examined. Haseman (2006) similarly explains that practice-led research can produce knowledge through creative and performative means. In this study, the short-video prototype is both a creative product and a research instrument. It makes Cultural Symbols (C) visible for evaluation by experts and youth viewers.

The audience outcome structure follows Cognition (Cog), Affect (Aff) and Behavior (Beh), drawing from the cognition-affect-behavior tradition in communication-effect research (Lavidge and

Steiner, 1961). Cognition (Cog) refers to understanding cultural and border-related meanings. Affect (Aff) refers to emotional resonance, belonging and credibility. Behavior (Beh) refers to behavioural intention, such as willingness to discuss, share or participate. These outcomes are interpreted descriptively rather than causally.

3. MATERIALS AND METHODS

3.1. Research Design

The study adopted a mixed-methods, practice-based design. The broader research project included theoretical analysis, field observation, expert consultation, a contextual youth survey, prototype production, audience evaluation and limited platform observation. The present article reports only the data most relevant to the Scientific Culture direction: Cultural Symbols (C)-oriented diagnostic evidence, N = 50 pre-post audience outcomes and selected expert evaluation.

A macro youth survey (N = 500) was used during the preliminary stage of the broader research project to support contextual profiling and variable development. In the present article, this survey is not treated as a main analytical dataset. Its role is limited to clarifying how the target audience, media-use context and cultural communication needs were initially identified. This allows the analysis to remain focused on border heritage and Cultural Symbols (C), while broader audience ecology is treated as contextual background rather than as the central object of analysis.

The practice-based prototype consisted of a six-episode short-video series developed for border youth audiences. The production process translated Cultural Symbols (C) into scripts, shot design, field filming, editing, sound design and platform-ready versions. Digital Narrative (D4 Authenticity (highest priority)) and Audiovisual Semiotics (S4 Visual Authenticity) were used as supporting controls to preserve credibility and avoid artificial representation.

3.2. Participants and Evidence Sources

The first main evidence source was a fixed-sample pre-post audience test with 50 youth viewers from the target audience group. Participants completed a short questionnaire before and after viewing the prototype. The questionnaire measured Cognition (Cog), Affect (Aff) and Behavior (Beh) outcomes using Likert-type items.

The second main evidence source was a post-viewing diagnostic of Cultural Symbols (C). The diagnostic asked viewers to evaluate how strongly

they perceived key Cultural Symbols (C) variables in the prototype. Although the larger diagnostic covered Digital Narrative (D), Cultural Symbols (C) and Audiovisual Semiotics (S), this article reports the Cultural Symbols (C) results as the core evidence.

The third evidence source was selected expert evaluation by 12 specialists from narrative theory, policy, education and media production backgrounds. For this article, expert evaluation is reported only in relation to model clarity, explanatory strength and contextual governance. Expert data are used as supporting validation rather than as the central empirical focus.

Douyin platform indicators were collected in the broader project, but in this article they are used only as supplementary ecological observation. They are not treated as evidence of cultural impact or causal behavioural change. Their function is limited to checking whether the prototype had basic visibility and interaction conditions after release.

3.3. Measures and Analysis

The pre-post audience test used descriptive mean comparison. The purpose was to identify whether the prototype generated positive movement in Cognition (Cog), Affect (Aff) and Behavior (Beh). Because the design was practice-based and field-oriented, the study does not claim strong causal inference.

The Cultural Symbols (C) diagnostic was analysed through ranked mean scores. The five reported variables were Cultural Symbols (C1 Local cultural elements), Cultural Symbols (C2 Symbolic Meaning (Symbolism)), Cultural Symbols (C3 Ethnic identity symbols), Cultural Symbols (C4 Historical Memory) and Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)). The ranking was used to identify which border heritage symbols were most salient to youth viewers.

Expert evaluation was analysed through selected mean scores and qualitative interpretation. The analysis emphasized how expert feedback supported the Cultural Symbols (C)-centred model and where contextual compliance required further attention. Finally, all evidence was interpreted through an evidence-to-action logic, meaning that each result was connected to possible refinement of the practice-based audiovisual model.

4. RESULTS

4.1. Cultural Symbols (C)-centred Model

The first result is a focused Cultural Symbols (C)-centred model for digital border heritage communication. As shown in Figure 1, border

heritage resources are translated into five Cultural Symbols (C) variables. These variables are then received by youth audiences through Cognition (Cog), Affect (Aff) and Behavior (Beh), while Digital Narrative (D4 Authenticity (highest priority)) and Audiovisual Semiotics (S4 Visual Authenticity) function as supporting credibility controls.

The model suggests that border heritage

communication should begin from living cultural resources rather than from platform technique alone. Local cultural elements, symbolic meaning, ethnic identity symbols, historical memory and border geocultural space provide the core cultural material. Narrative authenticity and visual authenticity help prevent these materials from being perceived as staged or externally imposed.

Table 1: Cultural Symbols (C) Variables and their Roles in border Heritage Communication.

Variable	Operational meaning	Role in this study
Cultural Symbols (C1 Local cultural elements)	Recognizable local scenes, objects, rituals and hometown cues	Makes border heritage locally identifiable for youth viewers
Cultural Symbols (C2 Symbolic Meaning (Symbolism))	Symbolic meaning embedded naturally in story and place	Links local signs to broader cultural belonging without slogan-like expression
Cultural Symbols (C3 Ethnic identity symbols)	Ethnic identity codes expressed through cultural practices and visual signs	Supports cultural closeness and respectful identity recognition
Cultural Symbols (C4 Historical Memory)	Oral histories, intergenerational memory and historical anchors	Connects youth reception to remembered border history
Cultural Symbols (C5 Border geocultural space (spatial symbolic layer))	Border gates, ports, routes, boundary lines and spatial symbols	Turns border geography into visible identity meaning

The model in Figure 1 summarizes the focused cultural-symbolic framework developed in this study. It places Cultural Symbols (C) at the centre

and treats Digital Narrative (D) and Audiovisual Semiotics (S) as supporting controls rather than as equal empirical focuses.

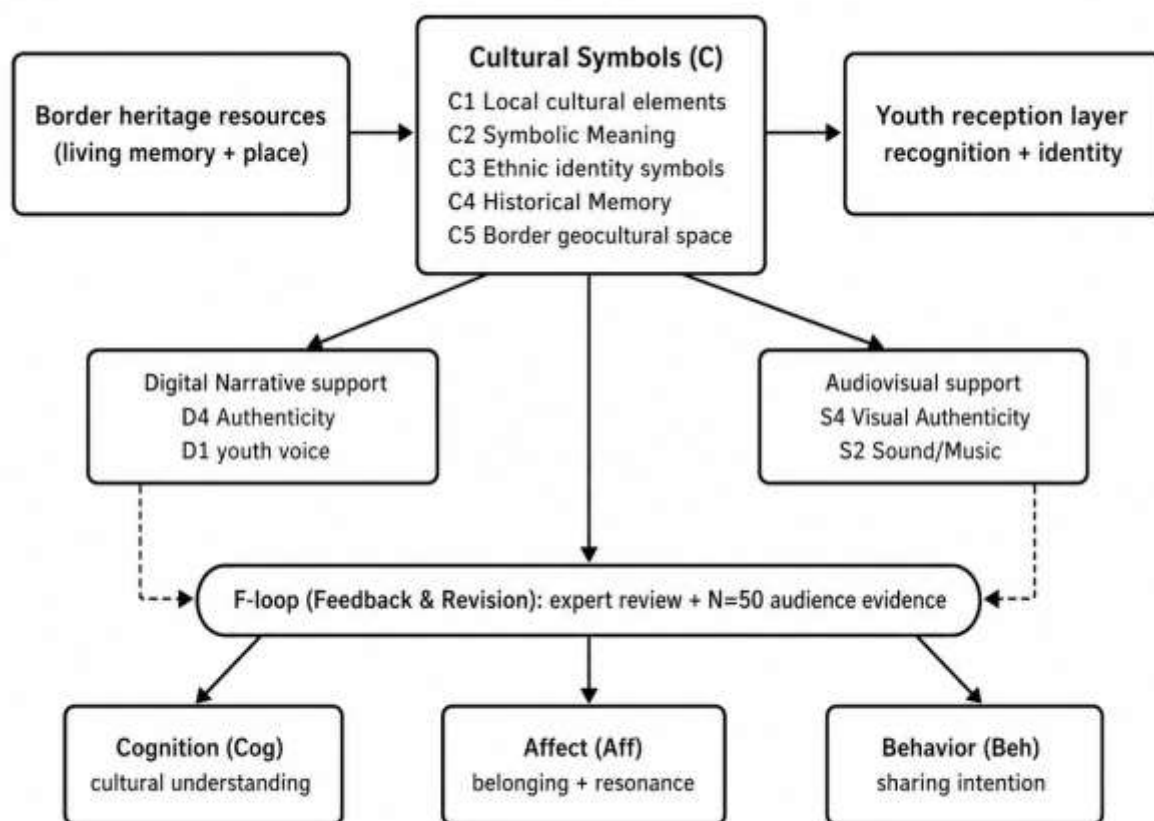


Figure 1: Cultural Symbols (C)-centred model for digital border heritage communication among ethnic minority youth.

4.2. Selected Expert Evaluation

Selected expert evaluation supported the cultural-symbolic logic of the model. As shown in Table II, the highest selected score was Mechanistic Explanatory Power ($M = 4.88$, $SD = 0.30$), suggesting that experts found the relationship between cultural symbols, audiovisual representation and youth reception to be clear. Variable Completeness & Boundary Clarity also received a high score ($M = 4.82$, $SD = 0.35$), indicating that the Cultural Symbols (C) variables

were considered sufficiently distinguishable and operational.

Contextual Compliance & Risk Governance received a lower score ($M = 4.03$, $SD = 0.66$). This result is important for border heritage communication. It suggests that cultural authenticity must be accompanied by careful contextual review, cultural respect and governance documentation. For this reason, the model includes an F-loop (Feedback & Revision) that can convert expert feedback into production refinement.

Table 2: Selected expert evaluation of the Cultural Symbols (C)-centred model.

Selected dimension	Mean (M)	SD	Interpretation
Variable Completeness & Boundary Clarity	4.82	0.35	Experts considered the Cultural Symbols (C) variables clear and usable
Mechanistic Explanatory Power	4.88	0.30	Experts agreed that the model explains how cultural symbols influence reception
Contextual Compliance & Risk Governance	4.03	0.66	Experts suggested strengthening governance and contextual review

4.3. N = 50 audience Outcome Comparison

The fixed-sample pre-post audience test indicated positive audience-side movement after viewing the prototype. As shown in Figure 2, Cognition (Cog) increased from 4.59 to 4.65, Affect (Aff) increased from 4.55 to 4.62, and Behavior (Beh) increased from 4.42 to 4.56. The overall mean across the three domains increased from 4.52 to 4.61.

These results should be interpreted as descriptive evidence rather than causal proof. They suggest that the prototype supported cultural understanding, emotional resonance and behavioural intention in the same positive direction. For the Cultural Symbols (C)-centred focus of this study, the value of this result is that it provides audience-side support for the argument that border heritage symbols can be converted into meaningful digital communication.

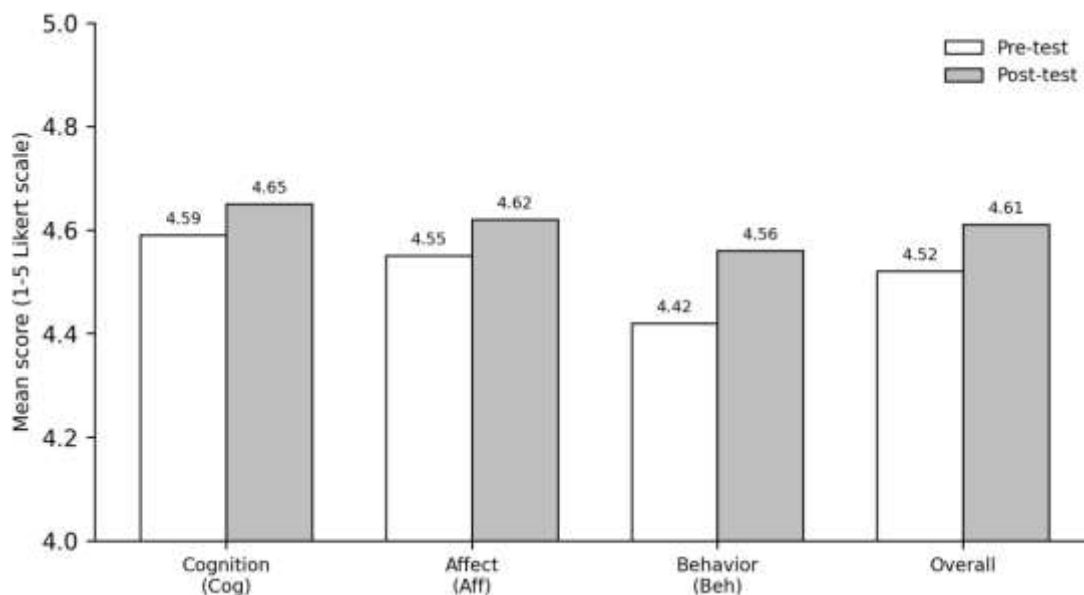


Figure 2: Pre-post Comparison of Cognition (Cog), Affect (Aff) and Behavior (Beh) after Viewing the Prototype (N = 50).

4.4. Cultural Symbols (C) Diagnostic Results

The post-viewing Cultural Symbols (C) diagnostic is the central empirical evidence in this article. Table

III reports the five Cultural Symbols (C) variables and their ranks within the larger 14-variable diagnostic. Cultural Symbols (C4 Historical Memory) ranked first overall ($M = 4.68$), followed by Cultural

Symbols (C2 Symbolic Meaning (Symbolism)) (M = 4.66), Cultural Symbols (C1 Local cultural elements) (M = 4.62) and Cultural Symbols (C3 Ethnic identity symbols) (M = 4.60). Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)) also received a positive score (M = 4.54), although it ranked lower than the other Cultural Symbols (C) variables.

The ranking indicates that youth viewers

responded most strongly to historical memory, symbolic meaning, local recognizability and ethnic identity. This supports the argument that border heritage communication should not rely only on visual spectacle or platform technique. Instead, it should organize living memory and local symbols into credible audiovisual experience.

Table 3: Cultural Symbols (C) Post-viewing Diagnostic Results within the 14-Variable Diagnostic.

Full diagnostic rank	Cultural Symbols (C) variable	Mean (M)	Interpretation
1	Cultural Symbols (C4 Historical Memory)	4.68	Strongest reception variable; connects youth viewers to oral history and border memory
2	Cultural Symbols (C2 Symbolic Meaning (Symbolism))	4.66	Shows that naturally embedded symbolic meaning is highly salient
4	Cultural Symbols (C1 Local cultural elements)	4.62	Confirms the importance of recognizable local cues
5	Cultural Symbols (C3 Ethnic identity symbols)	4.60	Supports respectful identity recognition and cultural closeness
8	Cultural Symbols (C5 Border geocultural space (spatial symbolic layer))	4.54	Shows positive perception of border spaces as spatial identity anchors

4.5. Supplementary platform Observation

Platform indicators were used only as supplementary ecological context. They were not treated as evidence of cultural impact or causal behavioural change. Their function was limited to checking whether Audiovisual Semiotics (S5 Platform Adaptation (platform adaptation layer)) and Audiovisual Semiotics (S1 Rhythm/Editing) created basic visibility and interaction conditions for the prototype. This article therefore does not report detailed Douyin metrics, as the present analysis is limited to the cultural-symbolic reception layer rather than platform-performance evaluation.

5. DISCUSSION

5.1. Cultural Symbols (C) as the strongest heritage reception Layer

The strongest finding is that Cultural Symbols (C) formed the most visible and meaningful reception layer for youth viewers. Cultural Symbols (C4 Historical Memory) and Cultural Symbols (C2 Symbolic Meaning (Symbolism)) ranked highest, which suggests that historically grounded and meaningfully embedded symbols are more salient than purely technical audiovisual elements. This finding supports the theoretical claim that heritage communication depends on symbolic interpretation and cultural memory rather than on visual display alone.

Cultural Symbols (C4 Historical Memory) was especially important because it connected present-

day youth experience to remembered border history. In audiovisual practice, historical memory became meaningful through oral accounts, commemorative scenes, local stories and spatial anchors. This supports Assmann's (2011) view that cultural memory is sustained through symbolic forms and repeated acts of remembrance. It also shows that intangible cultural heritage can be communicated through short video when memory is connected to real people, places and voices.

Cultural Symbols (C2 Symbolic Meaning (Symbolism)) performed strongly because symbolic meaning was embedded within narrative and space rather than presented as direct slogan. This is important for youth communication. Young viewers may resist over-explicit messaging, but they can respond positively when symbols emerge naturally from lived situations. Therefore, border heritage communication should design symbolic meaning through story, place and audiovisual texture.

5.2. Locality, Ethnicity and border Space

Cultural Symbols (C1 Local cultural elements) and Cultural Symbols (C3 Ethnic identity symbols) also scored highly. This suggests that local recognizability and ethnic identity codes are central to youth-oriented border heritage communication. Local cultural elements help viewers identify the represented world as familiar and credible. Ethnic identity symbols provide cultural closeness when they are used respectfully and accurately.

Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)) ranked lower than the other

Cultural Symbols (C) variables but still received a positive mean score. This may indicate that border space functions as a deeper symbolic layer. Viewers may immediately recognize local elements and historical memory, while border gates, ports, routes and boundary lines require more narrative explanation to become emotionally meaningful. Therefore, border geocultural space should be supported by Digital Narrative (D1 Narrative Perspective), Digital Narrative (D4 Authenticity (highest priority)) and Audiovisual Semiotics (S4 Visual Authenticity).

This finding is consistent with Bhabha's (1994) discussion of in-between cultural spaces. Border spaces are not merely geographic locations. They are interpretive spaces where local identity, ethnic identity and national-cultural belonging intersect. Short-video communication can make this intersection visible, but only if spatial symbols are connected to youth experience and living memory.

5.3. Authenticity and Audiovisual support

Although this article focuses on Cultural Symbols (C), Digital Narrative (D4 Authenticity (highest priority)) and Audiovisual Semiotics (S4 Visual Authenticity) remain necessary supporting controls. Authenticity helps prevent border heritage communication from appearing staged, promotional or externally imposed. This is particularly important for youth viewers, who are familiar with platform conventions and may quickly recognize overly polished or artificial content.

Audiovisual support also matters. Kress and van Leeuwen (2006) show that visual design shapes meaning through composition, salience and framing. Pink (2013) and Rose (2016) emphasize that visual methods must be interpreted in relation to production and reception contexts. In this study, visual authenticity, natural light, real environments and documentary texture supported the credibility of Cultural Symbols (C). Therefore, audiovisual design should not overpower cultural symbols; it should make them more perceivable and trustworthy.

5.4. Implications for Scientific Culture and heritage practice

The contribution of this article lies in demonstrating how border heritage can be transformed into a focused Cultural Symbols (C)-centred audiovisual model. The model is useful for cultural institutions, educators, media producers and local cultural communication projects. It provides a practical question sequence: Which local cultural elements are recognizable? Which symbolic

meanings can be embedded naturally? Which ethnic identity symbols are respectful? Which historical memories are emotionally meaningful? Which border spaces can function as identity anchors?

The article also contributes methodologically by showing how a practice-based audiovisual prototype can function as a research instrument. Instead of separating theory, production and evaluation, the study links Cultural Symbols (C), audience reception and expert feedback through an evidence-to-action logic. This makes the model adaptable to digital heritage education, intangible cultural heritage promotion, local cultural tourism communication and youth-oriented border storytelling.

By focusing on the cultural-symbolic reception layer, this article provides a concentrated account of how border heritage can be translated into youth-oriented digital communication. Broader audience ecology, full model evaluation and platform-performance indicators are treated as contextual or supplementary issues rather than as the main analytical focus. This allows the discussion to remain centred on border heritage, Cultural Symbols (C) and youth identity, while highlighting how living memory, symbolic meaning, local recognizability and border geocultural space can support culturally sensitive audiovisual communication.

6. CONCLUSIONS

This article developed a focused Cultural Symbols (C)-centred model for digital border heritage communication among ethnic minority youth in China's Guangxi border region. The broader research project included theoretical analysis, field observation, expert consultation, a contextual youth survey, prototype production, audience evaluation and limited platform observation.

The findings show that Cultural Symbols (C4 Historical Memory) was the strongest perceived variable, followed by Cultural Symbols (C2 Symbolic Meaning (Symbolism)), Cultural Symbols (C1 Local cultural elements) and Cultural Symbols (C3 Ethnic identity symbols). Cultural Symbols (C5 Border geocultural space (spatial symbolic layer)) also functioned as an important spatial identity anchor. Together, these results show that youth-oriented border heritage communication depends on living memory, local recognizability, symbolic meaning, ethnic identity and credible spatial representation.

The N = 50 pre-post comparison indicated positive descriptive movement in Cognition (Cog), Affect (Aff) and Behavior (Beh), suggesting that the prototype supported cultural understanding, emotional resonance and sharing intention. Expert

evaluation further confirmed the model's explanatory strength while reminding that contextual compliance and governance require continued attention.

The study has limitations. The N = 50 audience test was descriptive and cannot establish causality. The Cultural Symbols (C) diagnostic was conducted in one regional context and should be tested in other border regions. Platform indicators were used only

as supplementary context and were not analysed in detail. Future research should compare different border communities, conduct longitudinal audience tracking and test how specific Cultural Symbols (C) variables interact with audiovisual authenticity. Nevertheless, the proposed model offers a practical and transferable approach for digital heritage communication in culturally complex border settings.

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REFERENCES

- Anderson, B. (1991) *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. Revised edition. London, Verso.
- Assmann, J. (2011) *Cultural Memory and Early Civilization: Writing, Remembrance, and Political Imagination*. Cambridge, Cambridge University Press.
- Barthes, R. (1977) *Image Music Text*. London, Fontana Press.
- Bhabha, H. K. (1994) *The Location of Culture*. London, Routledge.
- Brubaker, R. and Cooper, F. (2000) Beyond identity. *Theory and Society*, Vol. 29, No. 1, 1-47. DOI: 10.1023/A:1007068714468.
- Candy, L. and Edmonds, E. A. (2018) Practice-based research in the creative arts: Foundations and futures from the front line. *Leonardo*, Vol. 51, No. 1, 63-69. DOI: 10.1162/LEON_a_01471.
- Chen, X., Kaye, D. B. V. and Zeng, J. (2021) #PositiveEnergy Douyin: Constructing playful patriotism in a Chinese short-video application. *Chinese Journal of Communication*, Vol. 14, No. 1, 97-117. DOI: 10.1080/17544750.2020.1761848.
- Geertz, C. (1973) *The Interpretation of Cultures: Selected Essays*. New York, Basic Books.
- Hall, S. (1997) *Representation: Cultural Representations and Signifying Practices*. London, SAGE.
- Haseman, B. (2006) A manifesto for performative research. *Media International Australia*, Vol. 118, No. 1, 98-106. DOI: 10.1177/1329878X0611800113.
- Jenkins, H. (2006) *Convergence Culture: Where Old and New Media Collide*. New York, New York University Press.
- Jenkins, H., Purushotma, R., Weigel, M., Clinton, K. and Robison, A. J. (2009) *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. Cambridge, MA, MIT Press.
- Kaye, D. B. V., Chen, X. and Zeng, J. (2021) The co-evolution of two Chinese mobile short video apps: Parallel platformization of Douyin and TikTok. *Mobile Media & Communication*, Vol. 9, No. 2, 229-253. DOI: 10.1177/2050157920952120.
- Kress, G. and van Leeuwen, T. (2006) *Reading Images: The Grammar of Visual Design*. 2nd edition. London, Routledge.
- Lavidge, R. J. and Steiner, G. A. (1961) A model for predictive measurements of advertising effectiveness. *Journal of Marketing*, Vol. 25, No. 6, 59-62. DOI: 10.1177/002224296102500611.
- Manovich, L. (2001) *The Language of New Media*. Cambridge, MA, MIT Press.
- Pink, S. (2013) *Doing Visual Ethnography*. 3rd edition. London, SAGE.
- Rose, G. (2016) *Visual Methodologies: An Introduction to Researching with Visual Materials*. 4th edition. London, SAGE.
- Ryan, M.-L. (2001) *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media*.

- Baltimore, Johns Hopkins University Press.
- UNESCO (2003) Convention for the Safeguarding of the Intangible Cultural Heritage. Paris, UNESCO.
- Zeng, J., Abidin, C. and Schafer, M. S. (2021) Research perspectives on TikTok and its legacy apps: Introduction. *International Journal of Communication*, Vol. 15, 3161-3172.