

## **A Thematic Review of Graffiti Subculture Research (2020–2025): Space, Resistance, and Identity**

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### **ABSTRACT**

Graffiti has long been considered an artistic practice and a form of social expression. In recent years, research on graffiti subculture has grown, with scholars exploring its role in shaping urban space, supporting social movements, and preserving cultural memory. However, despite this growing body of research related to graffiti subculture, a comprehensive review of research topics from 2020 to 2025 remains lacking. This article aims to address this gap by synthesizing relevant literature on graffiti subculture from 2020 to 2025 using the ATLAS.ti 8 system. A keyword search and inclusion criteria were applied to the Art & Architecture Complete and Scopus databases, resulting in the identification of 56 peer-reviewed journal articles. However, after this screening process, only 27 articles were included. A thematic review of these 27 articles identified 13 initial codes, which were clustered into three themes: Graffiti and the Reconstruction of Urban Space; Graffiti's Practice in Social Movements and Protests; and Graffiti's Emotional Memory and Identity Construction. The results of this study contribute to future research on graffiti subculture and demonstrate the potential of graffiti at the intersection of creativity and commercialization, empowerment and co-optation, and emotional memory and identity. This study will also guide future research on graffiti subculture.

**Keywords:** Graffiti, Subculture, Space, Resistance, Identity.

### **INTRODUCTION**

Graffiti is often seen as visual pollution or vandalism in cities. However, with increasing research, graffiti is increasingly understood as a complex cultural phenomenon. Scholars have discovered that graffiti is not simply an impulsive expression of grassroots; it is a cultural language and a meaningful social phenomenon that reflects people's identities, power relations, and their positions in public space (Bryning et al., 2021). In recent years, graffiti research has expanded to encompass a wider range of disciplines, including sociology, art history, and cultural studies (Cercleux, 2021; Abram, 2024).

Research indicates that graffiti provides a unique space for negotiation in cities. The role of graffiti is becoming increasingly complex. On the one hand, it serves as a means for young people and marginalized groups to express themselves and strive for visibility (Jacobson, 2020; Zimuto et al., 2023). On the other hand, it is also used by some city governments and institutions to promote tourism or urban renewal, and even becomes part of city branding (Cercleux, 2021; Kukla, 2024). Furthermore, some studies have explored the cultural significance and academic position of graffiti from a broader perspective. Scholars have attempted to contextualize graffiti within the frameworks of globalization, digital communication, and collective memory (Proehl, 2024; Baldini, 2023).

However, misunderstandings about graffiti persist within both the public and academic communities. For example, some view graffiti simply as rebellion or vandalism, overlooking its crucial role in social communication, cultural production, and identity construction (Tunić, 2024). Furthermore, while research is growing, it is often fragmented: some focus solely on artistic style, while others offer case studies, lacking a systematic compilation and comparison. This makes it difficult to fully understand the diverse roles graffiti plays in contemporary society.

Against this backdrop, this study aims to review recent research findings. Of particular note is the significant expansion in both the volume and scope of research on graffiti subculture between 2020 and 2025, coupled with the lack of a concluding article to answer the question: what are scholars discussing? Therefore, this article aims to systematically review the literature on graffiti subculture from 2020 to 2025 and discuss the main directions of current graffiti research based on the following questions:

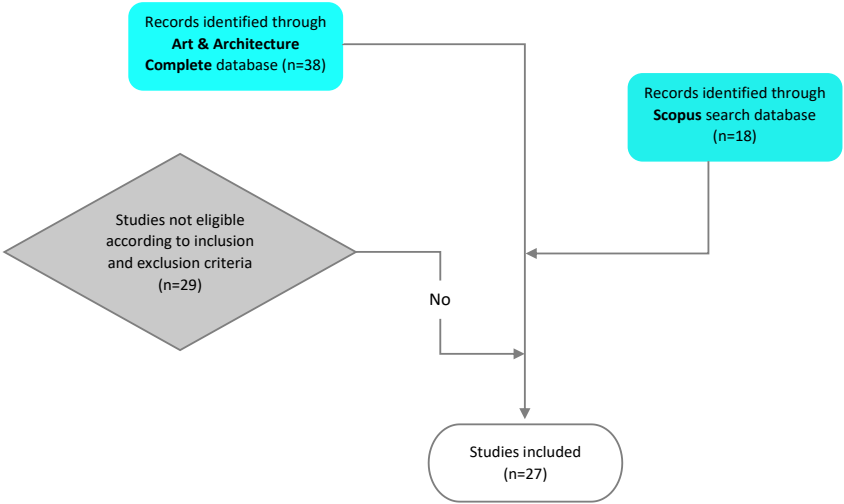
- RQ: What aspects of graffiti subculture research are discussed in publications from 2020 to 2025?

## METHODS

The term thematic review using ATLAS.ti as the tool, as introduced by Zairul et al. (2023), is implemented because the method of this study applies a thematic analysis procedure in a literature review. Braun and Clarke (2006) define thematic analysis as the process of identifying patterns and constructing themes through in-depth reading of relevant topics. The first step involved a systematic review of research articles to determine the current state of scholarly understanding of graffiti subculture. This study first extracted published articles from the Art & Architecture Complete database using the keywords "graffiti" and "subculture." The selection criteria were limited to English-language journal articles published between 2020 and 2025. To encompass a wider range of research literature, the researchers also extracted published articles from the Scopus database using the keywords TITLE-ABS-KEY ("graffiti" and "subculture") and PUBYEAR (2020 to 2025). Combining the results from both databases yielded a total of 56 publications. This review was limited to peer-reviewed journals and articles, and no duplicates were identified during the initial analysis. Next, we reviewed articles published in the past five years (2020 to 2025). After scanning all abstracts to remove articles not relevant to the research topic, we removed 29 of them, leaving 27 papers for review (see Figure 1).

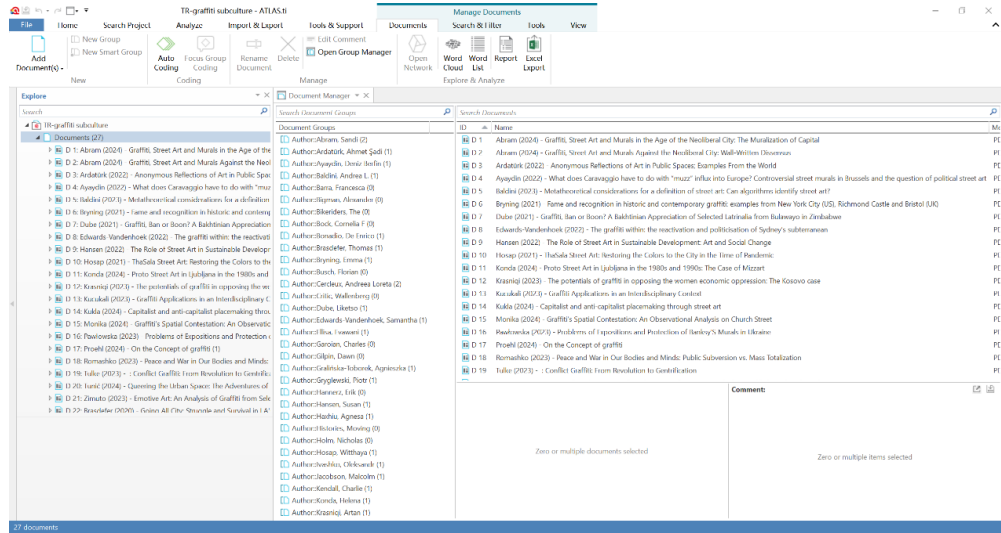
**Table 1: Search strings from Art & Architecture Complete and Scopus**

| Source                      | Keywords   | Results    |
|-----------------------------|--|------------|
| Art & Architecture Complete | Graffiti AND subculture AND PUBYEAR > = 2020 AND < = 2025 AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English"))  | 38 results |
| Scopus                      | ( TITLE-ABS-KEY ( graffiti ) AND TITLE-ABS-KEY ( subculture ) ) AND ( LIMIT-TO ( DOCTYPE, "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ) AND ( LIMIT-TO ( OA , "all" ) ) | 18 results |



**Figure 1: Inclusion and Exclusion criteria in the thematic review**

Next, all 27 metadata items were transferred to ATLAS.ti 8 and created as a raw document. Based on the metadata established in Scopus, multiple groupings within the code groups were automatically generated, as shown in Figure 2.



**Figure 2: The code group established from Scopus metadata.**

The categorization in ATLAS.ti 8 facilitated and systematic sorting. In the first round of coding, we generated 13 initial codes. These codes were then grouped into themes, ultimately resulting

in three final themes to answer the research question, "What aspects of graffiti subculture research are discussed in publications from 2020 to 2025?" The findings of this review will be divided into two sections: quantitative and qualitative.

## RESULTS AND DISCUSSION

### Quantitative Findings

The search strings in Table 1 identified 56 articles. After the screening process in Figure 1, only two articles remained. Next, the researchers imported these articles into ATLAS.ti 8 for data analysis. These articles were all from reputable, peer-reviewed journals (see Table 2). These journals spanned diverse disciplines, including sociology, cultural studies, aesthetics, architecture, intellectual property, archaeology, and art history. This preliminary evidence suggests widespread interest in the research potential of graffiti subculture across various fields. Because these articles were published in reputable indexed journals and conference proceedings, the conclusions of this review are reliable.

**Table 2: Articles Reviewed Based on Types of Journals**

|  | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|--|------|------|------|------|------|------|
| Critical Arts  |      | 1    |      | 1    |      |      |
| International Journal of Conservation Science          |      |      |      | 1    |      |      |
| Journal of Aesthetics and Culture                      |      |      | 1    |      |      |      |
| Journal of Aesthetics and Art Criticism                |      |      |      |      | 1    |      |
| Journal of Asian Architecture and Building Engineering |      |      |      |      | 1    |      |
| Revista Iberoamericana de la Propiedad Intelectual     |      |      |      | 1    |      |      |
| Societies  | 1    |      | 1    |      |      |      |
| Street Art and Urban Creativity                        |      | 1    | 2    | 3    | 6    |      |
| Sustainability (Switzerland)                           |      | 1    |      |      |      |      |
| The AAG Review of Books                                | 1    |      |      |      |      |      |
| Visual Anthropology                                    |      |      |      | 1    |      |      |
| Visual Studies   |      |      | 1    |      |      |      |
| Winterthur Portfolio                                   |      |      |      | 1    |      |      |
| World Archaeology                                      |      | 1    |      |      |      |      |

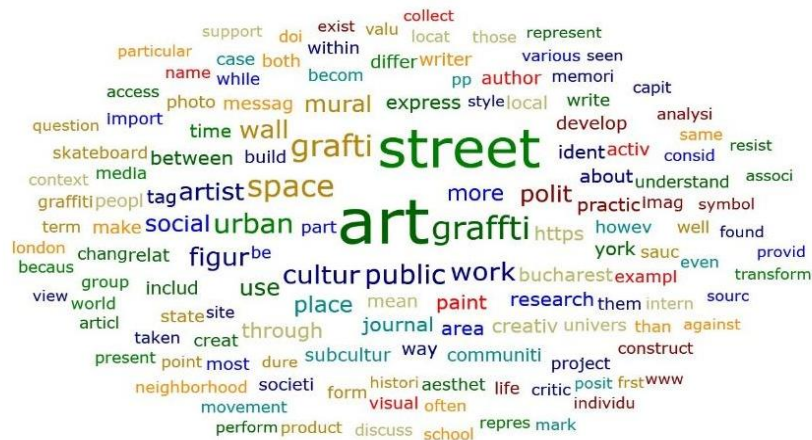
These 27 research articles were reviewed and compared to explore their similarities and differences, delving deeper into the research areas they focus on. The researchers conducted open coding of the content within the 27 articles and clustered these open codes into multiple themes. The relevance of these themes was repeatedly examined and summarized to ensure consistency of thematic content. Table 3 lists the publications and their distribution within the themes. Ten articles explored how graffiti transforms, utilizes, and redefines urban space, including urban regeneration, public space governance, and the spatial practices of capital and counter-capital. Six articles focused on the role of graffiti in political protest, social conflict, and public discourse, revealing its function as a tool of social resistance and collective voice. Eleven articles explored how graffiti carries emotions, shapes individual and group identities, and maintains the continuity and meaning of subcultures through memory and narrative. The researchers identified different perspectives on graffiti subculture to date. The research articles have been distributed according to the different research perspectives on graffiti subculture. The initial coding of 13 codes was further divided into three themes: Graffiti and the

Reconstruction of Urban Space; Graffiti's Practice in Social Movements and Protests; and Graffiti's Emotional Memory and Identity Construction. Figure 3 summarizes the high-frequency keywords mentioned in the graffiti subculture research literature from 2020 to 2025 through a word cloud generated from the 27 selected articles.

**Table 3: Thematic Mapping of the Publications**

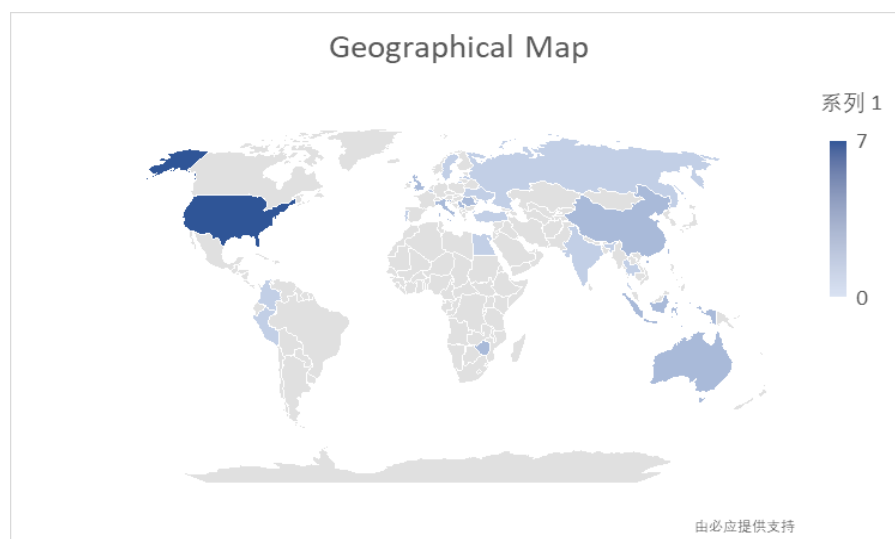
|                             | <b>Theme 1: Graffiti and the Reconstruction of Urban Space</b> | <b>Theme 2: Graffiti's Practice in Social Movements and Protests</b> | <b>Theme 3: Graffiti's Emotional Memory and Identity Construction</b> |
|-----------------------------|--|--|---|
| (Abram, 2024b)              | /  | -  | -   |
| (Abram, 2024a)              | /  | -  | -   |
| (Ardatürk, 2022)            | /  | -  | -   |
| (Ayaydin, 2022)             | -  | /  | -   |
| (Baldini, 2023)             | -  | -  | /   |
| (Bryning et al., 2021)      | -  | -  | /   |
| (Dube et al., 2021)         | -  | -  | /   |
| (Edwards-Vandenhoeck, 2022) | /  | -  | -   |
| (Hansen, 2022)              | -  | /  | -   |
| (Vorachart et al., 2021)    | /  | -  | -   |
| (Konda, 2024)               | -  | -  | /   |
| (Krasniqi & Haxhiu, 2023)   | -  | /  | -   |
| (Kucukali, 2023)            | -  | -  | /   |
| (Kukla, 2024)               | /  | -  | -   |
| (Monika, 2024)              | /  | -  | -   |
| (Pawłowska et al., 2023)    | -  | /  | -   |
| (Proehl, 2024)              | -  | -  | /   |
| (Romashko, 2023)            | -  | /  | -   |
| (Tulke, 2023)               | -  | /  | -   |
| (Tunić, 2024)               | -  | -  | /   |
| (Zimuto et al., 2023)       | -  | -  | /   |
| (Brasdefer, 2020)           | -  | -  | /   |
| (Bonadio & Schötz, 2023)    | -  | -  | /   |
| (Cercleux, 2021)            | /  | -  | -   |
| (Cercleux, 2022)            | /  | -  | -   |
| (Jacobson, 2020)            | -  | -  | /   |

|                           |   |   |   |
|---------------------------|---|---|---|
| (Wardhana & Ellisa, 2024) | / | - | - |
|---------------------------|---|---|---|

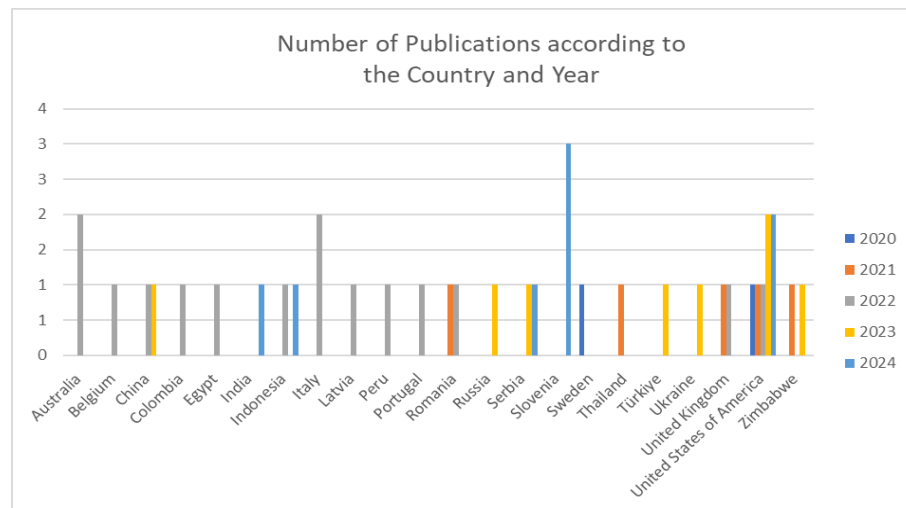


### Figure 3: Word Cloud Generated from 27 Articles

As shown in Figure 4, the United States leads the research on graffiti subculture. This may be due to its status as the birthplace of graffiti subculture. Furthermore, the United States has a long history of subculture research, a solid foundation, and abundant research findings. Figures 4 and 5 show that research on graffiti subculture is gradually increasing in emerging countries such as Slovenia and Serbia. Other countries, such as Australia, Belgium, China, Colombia, Egypt, India, Indonesia, Italy, Latvia, Peru, Portugal, Romania, Russia, Sweden, Thailand, Türkiye, Ukraine, the United Kingdom, and Zimbabwe, have also published publications on the topic. This demonstrates that graffiti subculture is increasingly becoming an important window into understanding the social cultures of various countries.



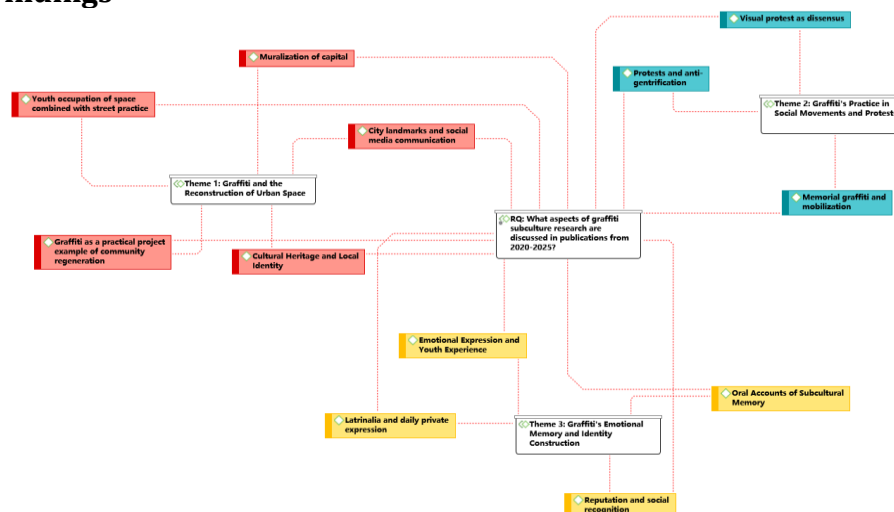
### Figure 4: Geographical Map



**Figure 5: Number of Publications according to the Country and Year**

This study analyzed the findings of 27 literature studies from 2019–2025, comparing publication year and country, publication and topic, and year and topic. In 2019–2020, research primarily focused on individual identity and memory, but in 2021, the focus gradually shifted to urban space. After 2022, social movements and political protests began to receive greater attention. Research reached a peak in 2023–2024, maintaining a focus on cities and protest while also incorporating theoretical and methodological reflections. Street Art and Urban Creativity became major publication platforms, and interdisciplinary journals such as *Sustainability* also emerged, indicating a broadening scope of research. Research topics focused primarily on three key areas. First, the remaking of urban space: graffiti is considered a significant factor influencing urban image and community vitality (Cercleux, 2021; Abram, 2024a). Second, social movements and resistance: Since 2022, a growing body of research has emphasized graffiti's role as a tool of political expression and resistance (Tulke, 2023; Krasniqi & Haxhiu, 2023). Finally, emotional memory and identity construction: graffiti is used to convey emotions, shape identity, and maintain subcultural memory (Zimuto et al., 2023; Jacobson, 2020). The next section discusses the qualitative findings from this thematic review.

## Qualitative Findings



**Figure 6: A network view on how to answer research questions through thematic review**

## Theme 1: Graffiti and the Reconstruction of Urban Space:

In many cities, graffiti is more than just colors or symbols on walls; it often influences people's perceptions and memories of the city. A growing number of studies have found that graffiti can make ordinary urban spaces special and even change how people perceive the city. Graffiti is particularly important in urban renewal and community building. When we discuss graffiti and the remaking of urban space, we primarily refer to how graffiti leaves its mark on public spaces and influences the meaning and function of these spaces. Some studies view it as a way to make history and culture visible, while others emphasize its role in urban development and community renewal. In other words, graffiti is not just decorative; it is closely linked to the city's economy, society, and culture. For example, Cercleux (2021) found that in Bucharest, street art can make the city center more attractive, bringing neglected corners back into the public eye and imbuing them with cultural and historical value. Wardhana and Ellisa's (2024) research in Jakarta emphasizes how youth, through public space strategies like skateboarding and graffiti, create new uses and values, a process that effectively transforms the meaning of public space. Vorachart et al. (2021), in their study of ThaSala, Thailand, also noted that during the pandemic, graffiti helped restore vitality and color to the community, becoming a force for bringing people together. At the same time, other scholars have reminded us that graffiti is not always simply about beautifying the environment. Graffiti often possesses contradictory qualities: on the one hand, it can be exploited by city governments and developers (Abram, 2024), while on the other, it is also a spontaneous spatial expression by residents (Wardhana & Ellisa, 2023).

Overall, research on graffiti and urban space shows that it not only beautifies cities or attracts tourists but also reflects the dynamics between different social groups. It can foster community cohesion, but can also be co-opted by capital and the government. Future research needs to delve deeper into this complexity, examining how graffiti is constantly given new meanings in different contexts.

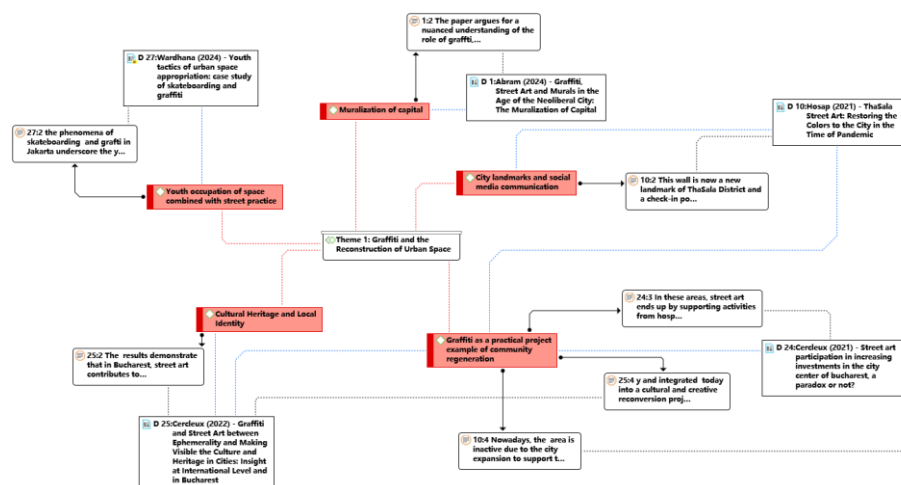


Figure 7: Graffiti and the Reconstruction of Urban Space

## Theme 2: Graffiti's Practice in Social Movements and Protests:

Graffiti is more than just a visual symbol on city walls; it is often a tool for social action. Whether in protests against urban renewal, feminist movements, or social justice issues, graffiti has been used to express voices and demands. Rather than simply being decorative art, this type of



graffiti often carries a clear political stance and social mobilization intent, becoming a directly visible form of protest in urban public spaces. Here, we understand graffiti as a form of protest practice in which groups or individuals express dissatisfaction with social inequality, political oppression, or economic exploitation by painting, spraying, or writing words and images in public spaces. This practice is often more than just artistic creation; it is an extension of a social movement, aiming to challenge existing power structures or to galvanize public awareness and resonance.

For example, at the Metelkova and Rog factories in Slovenia, researchers have documented extensive graffiti protesting gentrification and evictions. Slogans such as "STOP GENTRIFICATION!" and actions such as painting bulldozers pink appeared on these walls, symbolizing the resistance of residents and art groups against forced demolitions (Abram, 2024a; Abram, 2024b). These visual symbols not only conveyed protest but also became symbols of community strength. Another study focused on the feminist movement in Kosovo, noting that local feminist organizations used spray-painted text and images on the streets to expose the unequal treatment women face in unpaid labor, the public sector, and the private sector (Krasniqi & Haxhiu, 2020). This graffiti "wrote" implicit social inequalities onto the urban surface, allowing the issue to enter broader public discussion. Furthermore, a study of protest art in public spaces in Ljubljana found that political graffiti and posters were widely used to resist tourism commercialization and social cleansing. Whether it's handwritten signs reading "this is not a zoo" or "Rog lives" painted on walls, these visual protests continue to shape citizens' collective memories and identities (Abram, 2024a; Abram, 2024b). Overall, the use of graffiti in social movements and protests demonstrates that it is not just artistic expression but also a form of participation in public life. Through text and imagery, protesters can directly intervene in urban space and communicate with the broader public. This practice elevates graffiti beyond individual expression to become part of collective social action, making public space a crucial venue for the clash of political and cultural forces.

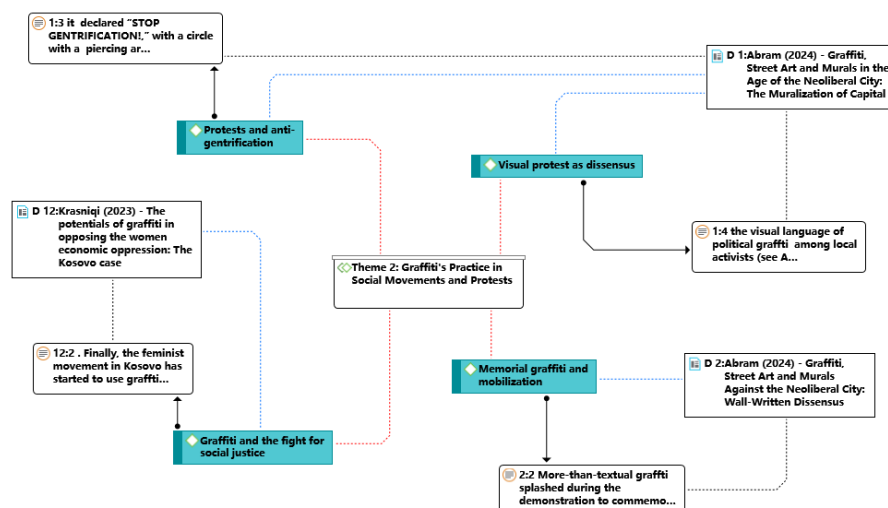


Figure 8: Graffiti's Practice in Social Movements and Protests

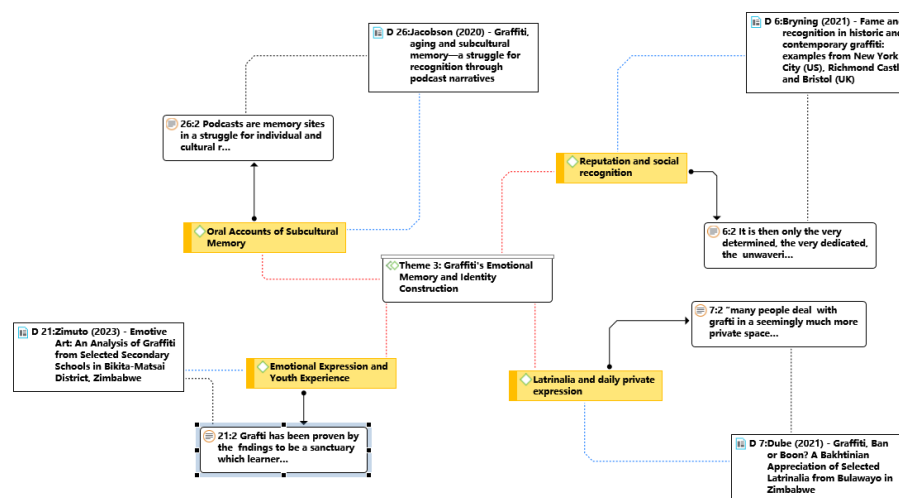
### Theme 3: Graffiti's Emotional Memory and Identity Construction:

Graffiti isn't always linked to political protest or urban renewal. Often, it carries the emotional memories and identities of individuals and groups. Through spaces and media like walls,

restroom stalls, and podcasts, artists "write" their experiences, emotions, and cultural histories, transforming what would otherwise be ephemeral street traces into cultural symbols that can be remembered and shared. This type of graffiti not only shapes individual identities but also helps preserve collective memories. Emotional memory and identity construction here primarily refer to how graffiti, as a narrative form and cultural practice, helps people express inner feelings, seek social recognition, and form a lasting tradition of memory within subcultures. This memory can be both a daily outlet for emotions and a long-term means of cultural preservation.

Regarding the long-term memory of subcultures, Jacobson (2020) analyzed how graffiti-themed podcasts have become sites of memory. He argues that these digitized oral archives help graffiti writers and communities preserve their stories, thereby gaining greater social recognition for a subculture once considered "deviant." Furthermore, research by Bryning et al. (2021) emphasizes the importance of "reputation and recognition." They found that, throughout history and into the present, graffiti writers have consistently pursued visibility and reputation in the eyes of their peers and the public. This pursuit not only shapes individual identity but also maintains the subculture's internal value system.

Other studies differ from the broader understanding of graffiti subculture, yet offer a unique perspective on it. In their study in Zimbabwe, Zimuto et al. (2023) found that secondary school students often left emotionally charged graffiti on walls. These words and images reflected their genuine feelings about school life, friendships, and the social environment. This suggests that graffiti is an important channel for young people to express their emotions and experiences. Similarly, Dube et al. (2021) discussed graffiti in restroom cubicles, known as "latrinalia." They noted that these seemingly casual words are actually a way for people to express private emotions and social critique, reminding us that graffiti culture exists not only in street spaces but also in the hidden corners of everyday life.



**Figure 9: Graffiti's Emotional Memory and Identity Construction**

Overall, these studies reveal the diverse functions of graffiti in the construction of identity and memory. It serves as a way for subcultural groups to preserve their history and strengthen their identities, and as an outlet for students and ordinary people to express their personal emotions.

Through these practices, graffiti continuously embeds the life experiences of individuals and groups into cities and daily spaces, making the seemingly short-lived graffiti become part of cultural memory.

## CONCLUSION

This review paper examines research on graffiti subculture from 2020–2025 and summarizes it from three perspectives: Graffiti and the Reconstruction of Urban Space; Graffiti's Practice in Social Movements and Protests; and Graffiti's Emotional Memory and Identity Construction. Overall, these studies reveal the multifaceted role of graffiti in contemporary society. It not only transforms the urban landscape and community atmosphere but also becomes a crucial form of protest and the struggle for rights. It also serves as a means for individuals and groups to preserve memory and construct identity.

At the urban level, graffiti helps shape local identity and participate in urban renewal, but it also faces the risk of being co-opted by capital and government. In social movements, graffiti often becomes a direct and powerful language of protest, allowing ignored voices to be heard in public spaces. At the level of culture and identity, graffiti carries emotional expression and collective memory, enabling subcultures to strive for recognition and perpetuate their traditions. However, the existing literature also has some shortcomings. Most studies focus on specific cases, lacking cross-regional and cross-cultural comparisons. Furthermore, the interplay between graffiti on social media and the real streets is understudied. These are all directions that future research can explore. In summary, graffiti transcends the stereotype of random street graffiti. It is a complex sociocultural phenomenon, a source of art and creativity, as well as a vehicle for protest and memory. Understanding graffiti means better understanding how cities, society, and culture are constantly being reshaped in the contemporary world.

## References

- [1] Abram, S. (2024a). Graffiti, street art and murals against the neoliberal city: Wall-written dissensus. *Street Art & Urban Creativity*, 10(1), 54–71. <https://doi.org/10.25765/sauc.v10i1.919>
- [2] Abram, S. (2024b). Graffiti, street art and murals in the age of the neoliberal city: The muralization of capital. *Street Art & Urban Creativity*, 10(1), 40–53. <https://doi.org/10.25765/sauc.v10i1.918>
- [3] Baldini, A. L. (2023). Metatheoretical considerations for a definition of street art: Can algorithms identify street art? *Street Art & Urban Creativity*, 9(2), 8–14. <https://doi.org/10.25765/sauc.v9i2.791>
- [4] Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- [5] Bryning, E., Kendall, C., Leyland, M., Mitman, T., & Schofield, J. (2021). Fame and recognition in historic and contemporary graffiti: examples from New York City (US), Richmond Castle and Bristol (UK). *World Archaeology*, 53(3), 435–450. <https://doi.org/10.1080/00438243.2022.2035802>
- [6] Campos, R., & Leal, G. (2021). An emerging art world: The de-subculturalization and artification process of graffiti and pixação in São Paulo. *International Journal of Cultural Studies*, 24(6), 974–992. <https://doi.org/10.1177/13678779211018481>
- [7] Cercleux, A.-L. (2021). Street art participation in increasing investments in the city center of Bucharest, a paradox or not? *Sustainability*, 13(24), 13697. <https://doi.org/10.3390/su132413697>
- [8] Dube, L., Mutasa, D. E., & Mheta, G. (2021). Graffiti, ban or boon? A bakhtinian appreciation of selected latrinalia from Bulawayo in Zimbabwe. *Critical Arts*, 35(5–6), 164–178. <https://doi.org/10.1080/02560046.2022.2055594>

- [9] Jacobson, M. (2020). Graffiti, aging and subcultural memory—A struggle for recognition through podcast narratives. *Societies* (Basel, Switzerland), 10(1), 1. <https://doi.org/10.3390/soc10010001>
- [10] Krasniqi, A., & Haxhiu, A. (2023). potentials of graffiti in opposing the women economic oppression: The Kosova case. *Street Art & Urban Creativity*, 9(2), 58–69. <https://doi.org/10.25765/sauc.v9i2.767>
- [11] Kukla, Q. R. (2024). Capitalist and anti-capitalist placemaking through street art. *Journal of Aesthetics and Art Criticism*. <https://doi.org/10.1093/jaac/kpae040>
- [12] Proehl, K. (2024). On the Concept of graffiti. *Street Art & Urban Creativity*, 10(1), 90–97. <https://doi.org/10.25765/sauc.v10i1.921>
- [13] Tunic, S. (2024). Queering the urban space: The adventures of Inspector Yoda the Wrinkled in Belgrade, Serbia. *Street Art & Urban Creativity*, 10(1), 72–89. <https://doi.org/10.25765/sauc.v10i1.920>
- [14] Vorachart, V., Hosap, W., & Preeyawongsakul, P. (2021). ThaSala street art: Restoring the colors to the city in the time of pandemic. *Street Art & Urban Creativity*, 7(1), 8–27. <https://doi.org/10.25765/sauc.v7i1.479>
- [15] Wardhana, N., & Ellisa, E. (2023). Youth tactics of urban space appropriation: case study of skateboarding and graffiti. *Journal of Asian Architecture and Building Engineering*, 1–17. <https://doi.org/10.1080/13467581.2023.2232837>
- [16] Zairul, M., Azli, M., & Azlan, A. (2023). Defying tradition or maintaining the status quo? Moving towards a new hybrid architecture studio education to support blended learning post-COVID-19. *International Journal of Architectural Research Archnet-IJAR*, 17(3), 554–573. <https://doi.org/10.1108/arch-11-2022-0251>
- [17] Zimuto, N. C., Mojapelo, M. L., & Mutasa, D. E. (2023). Emotive art: An analysis of graffiti from selected secondary schools in bikita-matsai district, Zimbabwe. *Critical Arts*, 37(1), 39–53. <https://doi.org/10.1080/02560046.2023.2212747>