

Review Article

Evaluating the Behaviour of Littering in Public Spaces within Different Theoretical Approaches

Sinem KIZILASLAN  

Faculty of Architecture, Design and Fine Arts, Cappadocia University, Nevşehir, Türkiye,
sinem.kizilaslan@kapadokya.edu.tr

Received: 21.01.2026, Accepted: 01.05.2026.

Keywords

Littering,
Environmental
Criminology,
Vandalism,
Environmental
Psychology, Public
Space.

Abstract Public spaces are an important resource for the continuity of community life. However, it should be borne in mind that this resource is not unlimited. While public spaces offer equal rights of use to the whole community, the responsibilities for the maintenance and protection of these areas do not constitute a direct legal obligation for individuals. This situation paves the way for the spread of behaviours that create disorder and pollution in public spaces, such as littering. Littering is a multidimensional phenomenon addressed differently across disciplines, which makes it difficult to evaluate existing studies within a holistic framework and to identify effective solutions. This study aims to develop a comprehensive conceptual framework by comparatively analysing how littering behaviour in public spaces is addressed within environmental criminology, vandalism, and environmental psychology. In doing so, the study synthesizes fragmented literature and clarifies the boundaries, focal points, and explanatory approaches of each discipline. Based on this synthesis, the study proposes an integrated perspective for defining littering behaviour in relation to physical environment, individual factors, and its legal status, and for developing more effective prevention strategies.

Corresponding author.

E-mail address: sinem.kizilaslan@kapadokya.edu.tr

The Author(s) retain the copyright of their works published in the journal, and their works are published as open access under the CC-BY-NC 4.0 license.

Cite this article;

Kizilaslan S. (2026). Evaluating the behaviour of littering in public spaces within different theoretical approaches. *LivenARCH+ Journal*, 3(2): 174-192. DOI:10.65775/livenarch.1869103

1. Introduction

The world supports human life as a resource. However, Hardin (1968) emphasizes that this resource is not infinite. Using a finite resource as if it will never run out and no individual taking responsibility for themselves will undoubtedly shorten the life of this resource or, from a different perspective, the life spans of those whose lives depend on this resource. The use of a limited resource by a constantly growing human population in a way that exceeds its carrying capacity is defined as “the tragedy of the commons” (Hardin, 1968). While Hardin (1968) emphasizes the finite nature of shared resources, recent studies show that littering behaviour is shaped not only by resource use but also by psychological and contextual factors. Systematic reviews indicate that waste-related behaviour is a major environmental, economic and social challenge, while the behavioural science literature on waste reduction remains fragmented (Wilson, Delmas, & Rajagopal, 2025). Even when individuals intend not to litter, situational factors may lead to inconsistent behaviour (Mori, Nakamata, Kuwayama, Yuki, & Ohnuma, 2024). Littering produces measurable spatial outcomes, contributing to urban environmental degradation (Nejadsadeghi et al., 2024). When resources such as air, water, and soil are freely used by everyone in accordance with their own interests, destruction is inevitable. Pollution can also be considered a form of spatial destruction. However, the issue is not taking something from the environment but leaving something behind. Hardin (1968) emphasizes that waste is preferred to be left in nature because the costs of leaving it untreated are lower than the costs of treating it, and he describes this situation as “fouling our own nest” (Hardin, 1968, p. 1246).

Public spaces refer to areas of common use for the community. All members of society have equal rights to use these spaces, but ownership or responsibility for their maintenance does not legally belong to individuals. “Problems in managing CPRs arise when the rational individual determines that he will still have access to the resource even if he does not fully contribute to its maintenance” (Ostrom, 1992, p. 415). While central government regulation or privatization may be one way to resolve these issues, it should not be forgotten that individual awareness and self-control are among the most effective strategies for ensuring a balance between protection and use in public spaces. From the perspective of architecture and urban design disciplines, public spaces are not only physical arrangements but also spatial structures where social behaviours are produced, directed, and negotiated. The formal characteristics of space, the use of materials, the level of maintenance, and the placement of fixtures directly affect the relationship users establish with the space and their behavioural practices in the public sphere. In this context, littering is not only considered an individual choice or a moral issue. Norm violations observed in public spaces are closely related to the legibility of the space, the level of ownership, and the usage scenarios produced through design. Therefore, examining how the behaviour of littering is conceptualized by different disciplines is important for discussing the role of architecture and urban design in shaping behaviour in public spaces. The protection of public space is possible both by using the space in a way that does not exceed its carrying capacity and by not polluting it. In this context, litter causes great damage to the environment and, consequently, to public property. Stephenson (2015) defines litter as having a destructive impact on landscapes, seas, and streets. It is also noted that litter affects

the entire community rather than just a specific segment of society. There are many definitions of what constitutes litter. “Most commonly, litter refers to items that are discarded by an individual, but it can include any item that is in an unacceptable location, regardless of the origin” (Schultz, Bator, Large, Bruni, & Tabanico, 2013, p. 36). Litter is anything that has been discarded or is not in a trash can. However, it is necessary to distinguish between litter thrown on the ground in public spaces and household waste and the term “trash” in the context of waste management. Litter, which emphasizes disorder and violation in public spaces, while the form created by the proper disposal of trash is expressed with the word “rubbish”. The concept addressed in this study is litter. In his report, Campbell (2007) created a litter map based on people's perceptions of what constitutes litter and their classification of items based on whether they are acceptable or not. According to litter map; small paper, foil paper, apple cores, and some cigarette butts are acceptable and ‘easier to pick up’ litter while plastic bags, and glass, are unacceptable but ‘easier to pick up’ litter. Ashtray contents, discarded food, chewing gum, nappies and dog excrement are unacceptable and ‘harder to pick up’ litter. The litter map is shown in Figure 1.

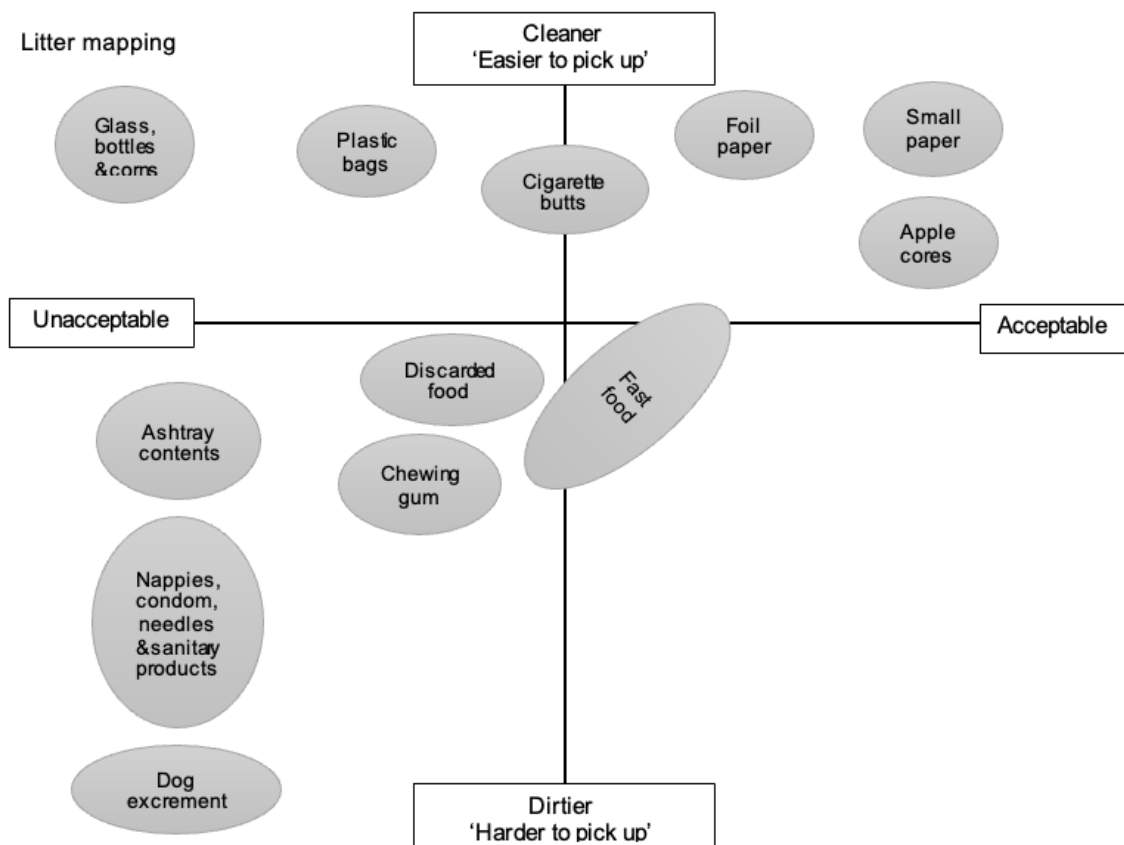


Figure 1. Litter mapping (Campbell, 2007).

Litter causes environmental, social, and aesthetic problems in the areas where it is discarded. Researchers have identified several reasons for littering, including laziness, not feeling a sense of belonging to the environment, insufficient or poorly located trash cans, the space already being littered, lack of education, lack of supervision, and rebellion against society (Campbell, 2007; Stephenson, 2015). Some of these variables focus on individual differences, while others focus on environmental factors (physical environment). Therefore, in studies to be

conducted regarding the issue of littering, it should first be decided within what scope the matter will be addressed.

As emphasized at the beginning of this study, keeping public spaces clean and protected is not defined as a direct and explicit legal responsibility for individuals in most contexts. The contribution of this study to the literature is that it classifies littering behaviour according to the areas of study that focus on the components of the physical environment, users, and legal framework. The aim of this study is to bring together the scattered studies in the literature on littering behaviour and to propose a comprehensive approach to addressing the issue. In this way, by defining the scope of littering behaviour (physical environment, personal factors, criminality, etc.), strategies to prevent littering can be developed. In relation to components, littering behaviour in public spaces has been examined within the scope of environmental criminology, vandalism, and environmental psychology.

The questions addressed in this study are as follows:

- Is littering in public spaces a crime?
- Is there a relationship between littering behaviour and the physical characteristics of the place where litter is discarded?
- What role do individual differences play in littering behaviour?
- Is littering a behavioural disorder?

2. Materials and Method

This study adopts a conceptual review approach to examine the literature on littering behaviour in public spaces across different disciplinary perspectives. Although it does not follow a systematic or meta-analysis design, a structured and transparent literature search and selection process was applied. Relevant studies were identified through academic databases such as Scopus, Web of Science and Google Scholar using keywords including 'littering', 'environmental criminology', 'vandalism', and 'environmental psychology'. Studies were included if they (i) directly addressed littering behaviour in public spaces, (ii) engaged with spatial, behavioural, or conceptual dimensions of the phenomenon, and (iii) were published as peer-reviewed journal articles, books, or conference proceedings in English or Turkish. Studies that did not explicitly relate to littering behaviour or lacked a spatial or behavioural focus were excluded. Following the screening process, a purposive selection of conceptually relevant studies was retained for analysis. Rather than being fully exhaustive, the review aims to provide comprehensive coverage of the literature by including a broad range of studies representing the main disciplinary approaches of littering behaviour. The selected studies were analysed comparatively based on three criteria that emerged from the analysis of the literature and were subsequently structured within the analytic framework presented in Figure 2: (i) legal status (whether littering is treated as a crime, a non-criminal act, or a debated issue); (ii) spatial feature (whether characteristics of the physical environment are considered a determining factor in the occurrence of littering; (iii) individual differences (whether the behaviour is interpreted as intentional or unintentional). The analysis was conducted through a comparative and interpretative synthesis, focusing on how different disciplines position littering behaviour within these three criteria. The resulting framework is presented in Figure 2.

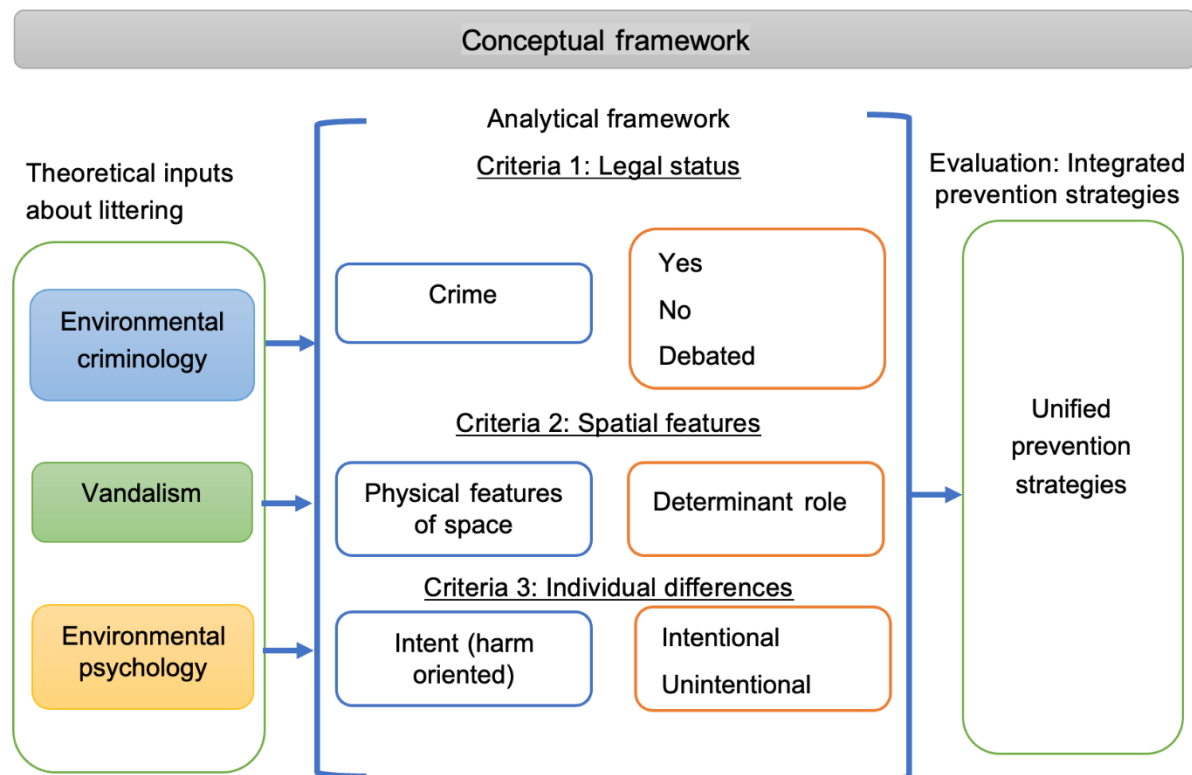


Figure 2. Conceptual framework (prepared by the author).

Figure 2 illustrates the interdisciplinary analysis of littering behaviour in public spaces. The model brings together environmental criminology, vandalism and environmental psychology and evaluates littering in terms of three criteria -legal status, spatial features and individual differences- highlighting how these dimensions contribute to the development of integrated prevention strategies.

3. Findings

3.1. *Littering behaviour within the scope of environmental criminology*

According to Tittle (2016), criminology covers a wide range of different types of crime, from the actions of international terrorist organizations to littering in public spaces. "Environmental criminology is a subfield of criminology that includes the impact of the environment on criminal behavior" (Cicerali & Cicerali, 2016). According to Sidebottom and Wortley (2016), the term environmental criminology was first coined by Jeffery in 1971 but was comprehensively defined by Paul and Patricia Brantingham in 1981. "Crime is theoretically and empirically linked to both social environment and physical environment of places" (Vilalta, Lopez, Fondevila, & Siordia, 2019, p. 3). Traditionally, the two central concerns of environmental criminology have been explaining the spatial distribution of offences and explaining the spatial distribution of offenders (Bottoms & Wiles, 2002, p. 621).

"A crime is a complex event. A crime occurs when four things are in concurrence: a law, an offender, a target and a place. Without a law there is no crime. Without an offender, someone who breaks the law, there is no crime. Without some object, target, or victim, there is no crime. Without a place in time and space where the other three come together,

there is no crime... environmental criminology is the study of the fourth dimension of crime" (Branthingham & Branthingham, 1981, p. 7).

"The fourth dimension of crime is place, a discrete location in time and space at which the other three dimensions intersect and a criminal event occurs" (Branthingham & Branthingham, 1981, p. 8). Therefore, a crime is not a general phenomenon that exists everywhere and at all times; it is a singular event that occurs at a specific time and place, with definable boundaries. "Environmental criminology is the study of crime, criminality, and victimization as they relate, first, to particular places and, secondly, to the way that individuals and organizations shape their activities spatially, and in so doing are in turn influenced by place-based or spatial factors" (Bottoms & Wiles, 2002, p. 620).

According to Wortley and Mazerolle (2008), the environmental perspective has three fundamental assumptions: (1) the environment is not a passive backdrop for initiating criminal behaviour, but rather plays a fundamental role in initiating crime and shaping its course; (2) crime is shaped by the location of crime-prone environments; crime clusters around crime opportunities and other environmental factors; (3) altering the crime-producing aspects of an environment can reduce crime rates in that location. Environmental criminology is examined at three different levels of analysis (Branthingham & Branthingham, 1981, p. 21). Macro analysis involves the distribution of crime between countries and between cities within a given country. Meso analysis involves examining crime in sub-areas of a city. Micro analysis involves examining specific crime areas. Building type, landscape features, lighting, and security equipment in the crime area are considered within this scope. According to this scope, littering in public spaces is examined at the micro analysis level.

Littering is rarely treated as a crime and investigated. In fact, littering in public spaces is not legally punishable in most countries. In other words, littering does not usually constitute one of the four dimensions of crime, namely the legal dimension. However, this study approaches littering not as a crime in the context of environmental criminology, but as a form of disorder operating within the same spatial and contextual dynamics as crime. Due to its invisibility and neglect, Stephenson (2015) has defined littering as "Cinderella of Criminology". Although littering does not have a legal dimension, according to Section 87 of the 1990 Environmental Protection Act, it is a crime for a person to throw, leave, or drop litter in a public place (Stephenson, 2015, p. 3).

Littering behaviour, which focuses on the physical environment, can be evaluated within the framework of the broken windows theory. The broken windows theory is an approach that states that neglected and disorderly public spaces will lead to serious crimes if no measures are taken (Vilalta et al. 2019; Wilson & Kelling, 1982). The broken windows custom has traditionally assumed that disorder is a construction quite apart from crime and that disorder temporally precedes crime in a causal fashion (Gau & Pratt, 2010, p. 758). According to Gau and Pratt (2010), disorder and crime are often found together, but it is difficult to say whether this overlap is consistent with the broken windows theory's sequential, causal process leading from disorder to crime, or alternatively, whether both disorder and crime are components of intense socio-structural disadvantage conditions. In their neighbourhood-level study examining the concept of disorder in its social and physical dimensions, Ross and Mirowsky (1999)

revealed a strong relationship between disorder and decay. "Graffiti, noise, vandalism, and litter are indicators of physical disorder" (Ross & Mirowsky, 1999, p. 423). Within this framework, it can be said that there is a relationship between disorderly public spaces and crime. However, it is not possible to establish a general causal relationship between disorder and crime, or between disorder and the subsequent development of crime due to intense and uncontrolled spatial use.

In this context, littering can be considered one of the most visible and everyday manifestations of physical disorder in public spaces within the framework of the broken windows theory. Littering leads to disorder, and disorder leads to more littering. "Order and disorder are two ends of a single continuum" (Ross & Mirowsky, 1999, p. 426) (they are not separate concepts). In this context, litter can be thought of as the subject of order and disorder in a sense.

According to Lawrence Cohen and Marcus Felson's (1979) Routine Activities Theory, inadequate protection, whether of a person or a place, makes a target more suitable. In this context, there are four characteristics that make a target suitable for criminals: value, inertia, visibility, and access. Here, inertia and visibility are directly related to the physical environment, while value (which has two different meanings: the profit to be gained from committing crime and the value of the physical environment) and access are related to individual perception and capacity but are not independent of environmental conditions. In this context, littering in public spaces can be associated with the space's low perceived value, high accessibility, low perceived control, and visible disorder indicators. In line with the theoretical foundations, a classification of littering has been drawn up within the framework of environmental criminology, as shown in Table 1.

Table 1. Classifications made within the scope of environmental criminology (prepared by the author).

Classifications made within the scope of environmental criminology					
Theoretical basis	Category	Sub-type	Definition	Spatial context	Criminological explanation
Routine activity theory	Behaviour type	littering caused by carelessness	The unintentional or careless disposal of litter	Picnic areas, recreational areas	Suitable target + motivated perpetrator + weak supervision
	Spatial context	Transport lines	Areas with high footfall	Bus stops, roadside	Weakening of control due to low commitment
	Social control	Low control	Weak oversight and invisibility	Empty parks, back streets	The opportunity for crime increases
Broken windows theory	Physical environment	Well-maintained environment	Clean and tidy areas	Parks where cleaning work is being carried out	Orderly environment reduces norm violation
	Physical environment	Damaged environment	Dirty, neglected areas	Streets littered with rubbish	Visual distortion encourages norm violations
Environmental criminology	Spatial context	Natural/rural area	Areas with low human density	Forest, coast, rural roads	Lack of oversight increases the crime opportunity

3.2. *Littering behaviour within the scope of vandalism*

The origin of vandalism is the word “vandal”. Essentially, Vandal is the name of a Germanic tribe known for its destructive influence on its surroundings, and this is the primary meaning of the word according to the Turkish Language Association. Due to the significant damage they caused to their surroundings, the name of this tribe “became the basis for the term vandalism, which came to mean damaging someone else's property” (Saritaş, 2009, p. 235). The other meaning of the word in the TDK is “a person or group who burns and destroys ancient cultural and artistic monuments, who does not appreciate their value”. Today, however, the word ‘vandal’ is not only used in the sense of the destruction/demolition of works of art. According to Sokolov, Kukhta, Kornienko, Kondratyeva and Kulhta (2017), definitions of vandalism in different countries focus on the destruction of objects with aesthetic value. However, even if an object merely fulfils its function, it can still be perceived as aesthetic. Sokolov et al. (2017) illustrate this with the example of a smooth glass surface. Glass can be perceived as both functional and aesthetic. Therefore, the concept of aesthetics is relative, and attention should be paid to the relationship between the word and the concept of aesthetics when defining vandalism. Vandalism carries the meanings of “deliberate and continuous destruction of public property” (Faizi, Hosseini, & Asl, 2008, p. 9) and “act of destruction” (Sokolov et al. 2017). There are many classifications within the scope of vandalism. These classifications are shown in Table 2.

Table 2. Classifications made within the scope of vandalism (prepared by the author).

Classifications made within the scope of vandalism	
Weinmayr (1969)	1. Overuse vandalism: This refers to the excessive use of something for its intended purpose. 2. Conflict vandalism: This refers to applications that are located in the wrong place or whose physical characteristics are not suitable for their intended use. An example given is a tree located in an area where children might want to play ball. Or children swinging on a tree branch that is at a suitable height. The tree branch may break, and vandals will be blamed. 3. Curiosity vandalism: This refers to actions that are not intended to cause harm but are related to a need to learn. Examples include closing the spout of a fountain to see how much water will spray out or uprooting a tree out of curiosity to see what its roots look like. 4. Leverage vandalism: Examples include removing wood from benches to use for playing games. 5. Deleterious vandalism: The removal of fixed fixtures 6. Irresistible temptation vandalism: Picking flowers, the urge to write on a brightly painted surface, riding a bicycle through a drainage problem area and splashing mud everywhere. 7. The-no-other-way-to-do-it vandalism: Leaning a bicycle against a tree because there is no bicycle parking or throwing paper and bottles on the ground because there are no trash cans.
Cohen (1984) (vandalism may be motivated by factors)	Acquisitive Tactical Vindictive Play Malicious
Coffield (1991) (vandalism may be motivated by factors)	Financial gain Peer- group pressure Pleasure Excitement
Sokolov et al. (2017)	Vandalism can be divided into intentional and unintentional. Unintentional vandalism is destruction and/or damage that serves no purpose but is merely for the satisfaction of the individual. Intentional vandalism is a destructive/polluting/disruptive act carried out consciously for a specific purpose.

Faizi et al. (2008) have identified the determining factors in vandalism as internal factors (inherent characteristics of objects and urban spaces, as well as people's internal and

individual characteristics) and external factors (environmental and social factors that play a significant role in the emergence of the desire for vandalism). According to Kenline (1976), looting behaviour for the purpose of acquiring money and goods, damage deliberately inflicted to achieve a specific goal (to attract attention, gain public recognition, etc.), damage to public property by someone seeking revenge for perceived injustice are among the causes of vandalism. Sarıtaş (2009) defines vandalism as violence against property, actions carried out for pleasure without the specific intent to cause harm, and acts of damage directed at works of art. Michael Weinmayr states that the real vandals in society are designers, contractors, and project developers. Weinmayr (1969) argues that 90% of actions labelled as vandalism can be prevented through design. Faizi et al. (2008) investigated how vandalism can be prevented by establishing urban and environmental strategies. According to Sokolov et al. (2017), however, only meaningless vandalism can be reduced through spatial design. Meaningful vandalism is when the vandal attempts to destroy a culture they perceive as hostile. Meaningful vandalism goes beyond design. In meaningless vandalism, there are no clearly defined targets. The individual has different motivational sources. Spatial designs can manage the individual's motivation process. Reducing and/or preventing crime through environmental regulations essentially falls under the scope of environmental criminology studies. While environmental criminology focuses on the environmental characteristics in which crime occurs, vandalism studies focus on the person committing the crime. From this perspective, the studies by Weinmayr (1969) and Faizi et al. (2008), which argue for the effect of environmental design in reducing vandalism, focus on environmental criminology based on vandalism. Faizi et al. (2008) classification of which behaviours constitute vandalism and which spaces are vulnerable to vandalism is shown in Table 3.

Table 3. Areas with a high risk of vandalism (Faizi, Hosseini & Asl, 2008).

Vandalistic behaviour	Spaces prone to vandalism
Floor/ground: Writing on floor, leaving rubbish, damaging soft surfaces like glass, putting obstacles and object midway especially in the way of passers-by, damaging herbal coverage.	. Places which are out of sight . Dark places at night . Lost spaces . Open and deserted spaces . Green and spotless spaces
Body: Writing on the wall, breaking glass and soft and transparent surfaces, breaking shop doors, and using explosive and flammable materials.	. City spaces which bring the possibility of escaping . Places which attract a special class of people . Places which make others feel envy
Urban furniture: Breaking ornamental lights, damaging trees, post boxes, public telephones, uprooting bars, damaging recreational equipment, advertising posters and traffic signs, benches, statues, bus shelters, and public toilets.	. Places which are empty of people

According to Article 151 of the Turkish Penal Code, the material element of the crime of damaging property can be expressed as partially or completely destroying, damaging, eliminating, spoiling, rendering unusable, or contaminating another person's movable or immovable property... (Sarıtaş, 2009, p. 68). Littering in public spaces also constitutes damage to public property. In their work, Krauss, Freedman and Whitcup (1996) identified three types of normative rules related to littering: Rules whose violation has serious consequences for others (such as theft), rules whose violation has equally serious consequences for others

(traffic rules), and rules whose violation does not have serious consequences and for which sanctions are not applied (such as rules regarding littering or noise). In the third type of rules, one person's actions become significant when they start affecting the living spaces of others. For example, if many people litter in a particular area, this will become disruptive for other users. In these normative rules, the main actor is the user of space. No details are given regarding the physical characteristics of space. However, Krauss et al. (1996), continuing their work, exemplified the "everyone else is doing it" behaviour, stating that if many people have littered in a particular area, it is likely that others will also litter there. This explanation is essentially related to the physical structure of space (dirty, filthy, and messy) and exhibits a structure consistent with the broken window theory.

According to Krauss et al. (1996), three conditions must be met for individual behaviour to be influenced by social norms: the individual must know that they should not litter; they must realize that the rule against littering is enforceable, and they must be affected by the consequences they might face (shame from others or self-judgment) if they do litter.

3.3. *Littering behaviour within the scope of environmental psychology*

Environmental psychology is a field of study where human behaviour is evaluated within the individual's own living environment rather than in a laboratory setting. In this context, the relationship between humans and the environment is defined through mutually reinforcing processes. Human behaviour can be explained within the framework of a hierarchy of sensation-perception-cognition-attitude-behaviour. Perceptual and cognitive processes are related to both physical and social environmental stimuli, as well as individual differences. In this context, littering in public spaces is a behaviour resulting from the interaction of environmental and personal variables. When the behaviour is performed consciously, it becomes an activity. An activity refers to the individual's intentional and directed action and necessarily takes place within a specific spatial context.

In environmental criminology, the concepts of space and place, used to explain the spatial dimension of crime, expand the scope of the discussion regarding the spatial context of criminal and disorderly behaviour when considered together with the distinction between space and place in environmental psychology. In environmental psychology, space refers to an objective and measurable framework defined by physical or visual boundaries, whereas place denotes the transformation of this space through human experience, processes of meaning-making, and patterns of use (Cresswell, 2015; Relph, 1976; Tuan, 1977;). Littering behaviour in public spaces can be defined as a deliberate act of littering if it occurs consciously, such as in protest, as a conscious choice, or when trash cans are available. Conscious behaviour is defined by the term 'activity' in environmental psychology. Activities are carried out in spaces according to user needs. However, the likelihood of deliberate littering decreases when the space acquires a specific place, meaning it is imbued with meaning by individuals and associated with a sense of belonging. If there is a meaningful relationship between a space and the user, that space becomes a 'place'. Therefore, considering littering as an activity necessitates a 'place-focused' assessment within the scope of *environmental criminology*. By contrast, when littering occurs at the 'behavioural level', the process takes shape at the

individual's mental and physical interface; while space becomes visible as the context in which this behaviour occurs, it is not the determining factor. Behaviour is, in short, a process comprising sensation, perception, cognition and attitude. The relationship between behaviour, activity, place and space is shown in Figure 3.

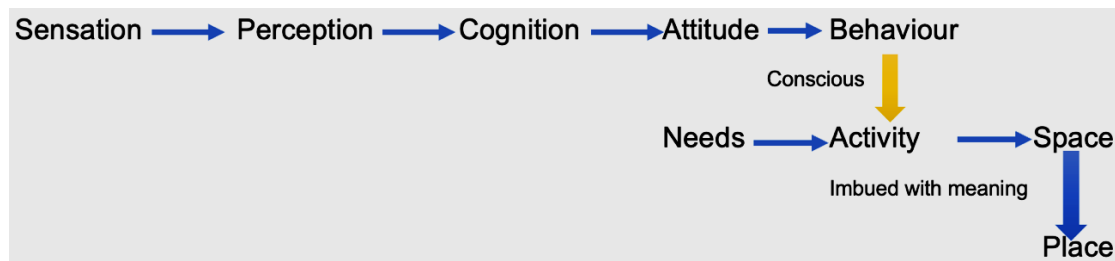


Figure 3. Behaviour-activity-space-place relationship (prepared by the author).

“Put bluntly, crimes in place tend to be more expressive and violent, whereas crimes in space tend to be more instrumental and acquisition oriented” (Kim, LaGrange, & Willis, 2012, s. 7). According to Figure 3, both littering as a behavioural act performed in a space and littering as an activity related to a place are fundamentally shaped by perceptual and cognitive differences. In other words, individual differences are a determining component in people's behaviours and activities. Therefore, littering as a behaviour/activity, addressed within the scope of environmental psychology, should be evaluated in terms of both physical environmental characteristics and individual differences. The study by Schultz et al. (2013) on which people litter, how often and in which places they litter offer solutions that consider both physical environment and personal variables in preventing littering behaviour. The work of Cialdini, Reno and Kallgren (1990), which is included in the environmental psychology literature, reveals how normative cues in the physical environment trigger disorderly behaviours and aligns with the assumptions of environmental criminology regarding the relationship between space and behaviour. In line with the theoretical foundations, a classification of littering has been drawn up within the framework of environmental psychology, as shown in Table 4.

Table 4. Classifications made within the scope of environmental psychology (prepared by the author).

Classifications made within the scope of environmental psychology					
Theoretical basis	Category	Sub-Type	Definition	Psychological context	Spatial context
Environmental psychology	Behavioural	Intentional	Deliberate littering as a result of choice	Cognition Attitude Behaviour	Space
	Emotional	Environmental disengagement	Reduced sensitivity or concern toward environmental degradation	Affect	Space
Cognitive limitations	Behavioural	Carelessness	Littering due to inattention or lack of awareness	Low attention	Space
Cialdini et al. (1990)	Normative	Social norms	Behaviour shaped by observing others and perceived norms	Social perception	Space
Broken windows theory	Norm violation	'Already dirty' effect	Existing environmental disorder triggers further norm violations	Perceived disorder	Space
Relph (1976), Tuan (1977)	Emotional	Place attachment	Reduced littering due to a sense of belonging	Meaning- making	Place
	Spatial behavior	Place based behaviour	Behaviour shaped by the meaning attributed to space	Cognitive and symbolic meaning	Place

4. Conclusion

Within the scope of this study, the approaches adopted in research focusing on the problem of littering in public spaces—specifically in the fields of environmental criminology, vandalism and environmental psychology—and the key focuses of these approaches have been examined.

Studies on littering behaviour are mostly within the scope of environmental criminology. Vandalism is concerned not with the act of throwing something into a place, but with the damage that the object thrown causes. Studies that address littering behaviour within the framework of environmental psychology are limited. However, most studies conducted within these three fields have the potential to generate data for another field of study. The common and divergent focuses of these fields of study are shown in Table 5.

Table 5. The evaluation of the behaviour of littering in public spaces within the framework of different theoretical approaches (prepared by the author).

Littering in public spaces				
	Is it a crime?	Is it related to the physical characteristics of the place?	Do individual differences play role?	Behaviour disorder?
Environmental criminology	No (mostly misdemeanors/ micro-violations)	Yes (maintenance, visibility, inspection))	Indirect	No
Vandalism	Debated (may be classified as micro-vandalism depending on context and intent)	Partially (public harm, visibility, access)	Yes (with intent to cause harm)	No
Environmental psychology	No	Yes (place perception, belonging, norms)	Yes (unintentional)	No (norm violation)

Table 5 shows that littering is considered not as a crime or behavioural disorder within the disciplines covered in this study, but as a contextual and spatial norm violation. Although littering is frequently described as antisocial behaviour in literature, this does not constitute a clinical assessment within the context of behavioural disorders. Littering represents an environmental and contextual assessment in the context of norm violation and the production of disorder in public spaces. Within vandalism literature, littering is not uniformly classified as a form of vandalism; however, in certain contexts- particularly when it produces visible public damage- it may be interpreted as a micro-vandalism. As seen in Table 5, physical environmental characteristics and individual variables are influential in littering. However, the theoretical positions of these variables differ according to the disciplines.

Individual differences are considered in environmental criminology not as an explanatory variable, but as a fixed background condition of the context in which the behaviour occurs. In contrast, in the literature on vandalism and environmental psychology, individual differences play an explanatory role. However, the approaches of these two fields to individual differences should be distinguished. In the environmental psychology literature, "activity" is a neutral concept referring to behaviour consciously performed by an individual. Vandalism, on the other

hand, defines a subjective type of these activities that involves the intent to damage public property. Therefore, while acts of vandalism can be considered conscious activities, not every activity defined within the scope of environmental psychology can be considered vandalism. In this context, even if the act of littering is a conscious activity, it should not be considered vandalism unless it is carried out with the intention of damaging public property.

While the physical environment is considered in environmental criminology as a structure of opportunity that enables behaviour, the vandalism literature positions the environment as a public object that is damaged, and environmental psychology evaluates the physical environment as an integral part of the processes of individual experience, perception, and norm production. These different approaches reveal that littering in public spaces cannot be explained by a single discipline and requires a multi-layered evaluation. Vandalism is considered a criminal offence (Bates, 2013; Goldstein, 1996; Salaieva & Lukashevych, 2022). In this context, littering should be evaluated at the intersection of vandalism and environmental criminology studies. It is evident that studies focusing on the physical environment and individual variables in relation to the behaviour of littering in public spaces require a comprehensive integration of data from the literature on environmental criminology, vandalism and environmental psychology.

This study demonstrates that littering in public spaces should be evaluated not only through individual attitudes or legal regulations, but also through the physical environmental conditions produced by architecture and urban design. Approaches addressed by different disciplines in the literature show that the order of space, its legibility, level of maintenance, and its interaction with the user are decisive in the emergence of behaviours defined as norm violations. In this context, architecture, rather than being a discipline that directly intervenes in preventing littering, offers a fundamental framework that produces the environmental conditions that guide behaviour. The conceptual findings emphasize the importance of developing holistic approaches in public space design that consider the production of behaviour.

Summary: The findings of the study have been addressed as follows, in line with the questions identified within the scope of the study;

- Is littering in public spaces a crime? The behaviour of littering is not treated as a criminal offence within the fields of environmental criminology, vandalism and environmental psychology. However, within the context of vandalism, the behaviour of littering is partially regarded as a criminal offence.
- Is there a relationship between littering behaviour and the physical characteristics of the place where litter is discarded? In studies on littering behaviour within the fields of environmental criminology and environmental psychology, the physical characteristics of the environment are significant. In studies on vandalism, however, the physical characteristics of the environment are not always a focus of every study.
- What role do individual differences play in littering behaviour? Individual differences in littering behaviour are examined in studies within the fields of vandalism and environmental psychology.
- Is littering a behavioural disorder? In none of the studies on environmental criminology, vandalism or environmental psychology is littering regarded as a behavioural disorder.

In order to prevent littering in public spaces, the physical characteristics of space, individual factors and the legal framework (crime) must be considered holistically. In this context, the study argues that research in environmental criminology, vandalism and environmental psychology must be conducted in an integrated manner to resolve the problem of littering.

5. Discussion

Attitudes that attempt to legitimize littering in public spaces can be listed as follows: "There's already someone to clean it up", "Others have littered here before me", "If there's no litter here, the cleaning staff will be unemployed", "There are no trash cans to throw the trash in", "Let those responsible for collecting the trash do their job", "I felt like it", ... etc. All these attitudes are human-centred statements. However, littering can negatively affect the entire urban ecosystem. Campbell (2007), in his report, mentions street animals that die due to litter thrown on the street or improperly into trash cans. This is an issue that can be discussed in terms of the concept of environmental justice, focusing on animals. As stakeholders of the city, street animals also have rights in the environment. Any negative intervention in the environment can harm them as well.

In her report, Campbell (2007) stated that in order to prevent littering, streets should be kept to a consistently high standard of cleanliness; there should be a sufficient number of trash cans, and education, advertising campaigns, and deterrent penalties should be implemented. Deterrent penalties can be achieved by elevating littering to the status of a legal offense, as shown in Table 3.

In his work, *Creating Defensible Space*, Newman (1973) draws attention to crime committed in cities, emphasizing that the fundamental problem is the lack of a structure in the urban physical environment that brings people together and fosters a sense of shared responsibility. Hirchi's (1969) social control theory, which posits that "social relations foster harmony, not crime" (Costello & Laub, 2020, p. 21), forms the basis for Newman's (1973) view. Illustrating the issue through the example of Pruitt-Igoe, Newman (1973) highlights how a housing project that fails to meet people's spatial needs can end in failure. Similarly, Henri Lefebvre (2019), in his work *The Production of Space*, states that space is socially produced, and therefore, the physical environment and the social environment cannot be considered separately. When these two approaches are considered together, it can be said that if the integrity of the physical and social environments is separated by sharp boundaries, the emergence of ruptures in public life is inevitable. Kızılaslan's (2024) suggestion that sidewalks should be regulated in accordance with normative goals within the framework of purpose framing theory emphasizes the importance of physical environment design that offers its users the opportunity for socialization. The study demonstrates how the theoretical perspectives of Newman (1973), Hirchi (1969), and Lefebvre (2019) on the role of social environment can be translated into practical applications by showing how social relations, spatial organization, and everyday practices shape the way spaces are experienced, used, and designed in real contexts. While littering in public spaces may seem like an insignificant detail at first glance, it can be considered a visible indicator of a broader process of disintegration. As noted in the literature, littering encourages similar behaviours in the same space, reinforcing physical disorder.

Physically polluted and neglected areas gradually become less preferred by users for social life. As usage decreases, the sense of belonging to space weakens or disappears completely. Public spaces lacking a sense of belonging are not protected or embraced by individuals. This process, rather than establishing a linear and inevitable causal relationship, progresses in a series of reinforcing stages, with low-intensity behaviours like littering contributing to the physical and social deterioration of public spaces over time. In this context, littering can be considered a small-scale but significant indicator in the transformation of urban space and the disintegration of public life.

The findings of this study demonstrate that littering behaviour cannot be explained solely through individual responsibility but should be understood as a context-dependent phenomenon shaped by the interaction between spatial conditions and social norm. In line with environmental criminology, the results highlight the determining role of physical environment characteristics such as maintenance, visibility and spatial organization in influencing behaviour. At the same time, consistent with environmental psychology, individual perceptions, social norms, and levels of environmental awareness play a significant role in shaping practices.

These findings suggest that strategies aimed at preventing littering should move beyond solely individual-oriented approaches and instead adopt an integrated framework combining spatial design and social interventions. In practical terms, this includes maintaining high standards of cleanliness, increasing the visibility and accessibility of waste disposal infrastructure, and designing public spaces that foster a sense of ownership and belonging among users. Moreover, reinforcing social norms through educational campaigns and behavioural cues can contribute to reducing littering behaviour. In this context, littering should be addressed not only as an individual act but also as an indicator of the broader relationship between people and space.

Beyond its empirical and conceptual findings, this study contributes to literature by offering an integrative framework that brings together fragmented disciplinary perspectives on littering behaviour. By positioning littering at the intersection of spatial conditions, individual factors, and legal interpretations, the study provides a structured way to understand how different fields define and approach the same phenomenon. This integrative perspective not only clarifies conceptual ambiguities in literature but also enables the development of more coherent and context-sensitive intervention strategies. More broadly, the study highlights that seemingly minor everyday practices such as littering should not be evaluated in isolation but as indicators of the quality of the relationship between individual and public space. In this sense, littering can be interpreted as a visible symptom of deeper spatial and social disconnections. Addressing such behaviours, therefore, requires not only behavioural regulation but also the design and maintenance of environments that support social cohesion, responsibility, and a sense of belonging.

Declaration of Ethical Standards

The article complies with national and international research and publication ethics.

Ethics Committee Approval was not required for the study.

Conflict of Interest

There was no conflict of interest.

Authors' Contributions

Author contributed alone to the article.

Declarations

The author takes full responsibility for the content and any modifications made during this process.

Originality Report

The article has been confirmed that it does not contain any plagiarism according to the originality report obtained from the iThenticate software.

Notes

This study is evaluated under the double-blind peer review system.

Please use livenarchjournal@ktu.edu.tr email address for submitting ethical statements.

References

- Bates, E. (2013). *Vandalism: A crime of place?* (Unpublished doctoral thesis). The University of Edinburgh, Scotland.
- Bottoms, A. E., & Wiles, P. (2002). Environmental criminology. In M. Maguire, R. Morgan, & R. Reiner (Eds.), *The Oxford Handbook of Criminology* (pp. 620-656). Oxford, England: Oxford University Press.
- Branthingham, P. J., & Branthingham, P. L. (1981). The dimension of crime. In P. J. Branthingham & P. L. Branthingham (Eds.), *Environmental Criminology* (pp. 7-26). Beverly Hills: SAGE.
- Campbell, F. (2007). *People who litter*. ENCAMS Research Report.
- Cialdini, R., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58(6), 1015-1026. <https://doi.org/10.1037/0022-3514.58.6.1015>
- Cicerali, E. E., & Cicerali, L. K. (2016). *Çevre ve suç: Şehir güvenliğini artırmada çevre psikolojisi yaklaşımı*. Paper presented at Istanbul Security Conference TASAM. Retrieved from (PDF) *Çevre ve suç: Şehir güvenliğini artırmada çevre psikoloji yaklaşımı (ENVIRONMENT AND PSYCHOLOGY: INCREASING URBAN SECURITY VIA INPUT FROM PSYCHOLOGY)*
- Coffield, F. (1991). *Vandalism and graffiti: The state of the art*. London: Calouste Gulbenkian Foundation.
- Cohen, L., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44, 588-608.
- Cohen, S. (1984). Sociological approaches to vandalism. In C. Levy-Leboyer (Ed.), *Vandalism: Behaviour and motivations* (pp.51-61). Amsterdam, New York: Elsevier Science Publishers.
- Costello, B. J., & Laub, J. H. (2020). Social control theory: The legacy of Travis Hirschi's causes of delinquency. *Annual Review of Criminology*, 3(1), 21-41. <https://doi.org/10.1146/annurev-criminol-011419-041527>
- Cresswell, T. (2015). *Place: An introduction* (2nd ed.). England: Wiley Blackwell.
- Faizi, M., Hosseini, S.-B., & Asl, S. R. (2008). Identification of environmental design methods and techniques for preventing vandalism. *Environmental Sciences*, 6(1), 9-20.
- Gau, J. M., & Pratt, T. C. (2010). Revisiting broken windows theory: Examining the sources of the discriminant validity of perceived disorder and crime. *Journal of Criminal Justice*, 38, 758-766. <https://doi.org/10.1016/j.jcrimjus.2010.05.002>
- Goldstein, A. P. (1996). *The Psychology of Vandalism*. New York: Plenum Press.
- Hardin, G. (1968). The tragedy of the commons: the population problem has no technical solution; it requires a fundamental extension in morality. *Science*, 162(3869), 1243-1248.
- Hirschi, T. (1969). *Causes of delinquency*. CA, USA:University of California Press.
- Kenline, G. A. (1976). *Vandalism-an overview*. Paper presented at the Vandalism and Outdoor Recreation Symposium, Berkeley, California. Retrieved from <https://books.google.com.tr/books?hl=tr&lr=&id=l4nplz2suQMC&oi=fnd&pg=>
- Kızılaslan, S. (2024). Normatif çerçeveleme kapsamında bir yaya kaldırımı peyzaj tasarımı örneği. *İdealkent*, 46(16), 2577-2602. <https://doi.org/10.31198/idealkent.1448502>

- Kim, S., LaGrange, R. L., & Willis, C. L. (2012). Place and crime: Integrating sociology of place and environmental criminology. *Urban Affairs Review*, 49(1), 1-15. <https://doi.org/10.1177/1078087412465401>
- Krauss, R. M., Freedman, J. L., & Whitcup, M. (1996). Field and laboratory studies of littering. In A. P. Goldstain (Ed.), *The Psychology of Vandalism* (pp. 273-290). New York and London: Plenum Press.
- Lefebvre, H. (2019). *Mekânın Üretimi* (I. Ergüden, Trans.). İstanbul: Sel Publishing. (Original work published 1974)
- Mori, Y., Nakamata, T., Kuwayama, R., Yuki, S., & Ohnuma, S. (2024). Developing the littering behavior model focusing on implementation intention: A challenge to anti-environmental behavior. *Journal of Material Cycles and Waste Management*, 26, 776–791. <https://doi.org/10.1007/s10163-024-01909-7>
- Newman, O. (1973). *Defensible space*. New York: Collier Books.
- Nejadsadeghi, E., Khosravani, F., Morovati, M., Heravi, M., Moein, H., Dowlatabad, A., Motlagh A., & Ghasemi, A. (2024) Study of pollution status in urban environment caused by attitude and waste littering behaviour of citizens. *Scientific Reports* 1-7. <https://doi.org/10.1038/s41598-024-76238-8>
- Ostrom, E. (1992). Governing the commons: The evolution of institutions for collective action. *National Resources Journal*, 32(2), 415-417.
- Relph, E. (1976). *Place and placelessness*. London: Pion Limited.
- Ross, C. E., & Mirowsky, J. (1999). Disorder and decay: The concept and measurement of perceived neighborhood disorder. *Urban Affairs Review*, 34(3), 412-432. <https://doi.org/10.1177/107808749903400304>
- Salaieva, K., & Lukashevych, S. (2022). Criminological research on modern vandalism in Ukraine. *Archives of Criminology and Forensic Sciences*, 2(6), 119-134. <https://doi.org/10.32353/acfs.6.2022.10>
- Sarıtaş, E. (2009). *Türk Ceza Hukuku'nda mala zarar verme suçu ve kriminolojik açıdan vandalism* (Unpublished master's thesis). İstanbul University Institute of Social Sciences, İstanbul.
- Schultz, P., Bator, R., Large, L. B., Bruni, C., & Tabanico, J. J. (2013). Littering in context: personal and environmental predictors of littering behavior. *Environment and Behavior*, 45(1), 35-59. <https://doi.org/10.1177/0013916511412179>
- Sidebottom, A., & Wortley, R. (2016). Environmental criminology. In A. R. Piquero (Ed.), *The Handbook of Criminological Theory* (pp. 156-181). NJ: Wiley Blackwell.
- Sokolov, A., Kukhta, M., Kornienko, M., Kondratyeva, Y., & Kukhta, A. (2017). Design as means of countering vandalism. *The European Proceedings of Social & Behavioural Sciences*, 19, 396-403.
- Stephenson, C. (2015). *Littering: The Cinderella of criminology*. *Aberystwyth University Student Law and Criminology Journal*, 2, 205-242. Retrieved from <https://www.aber.ac.uk › publications › auslcj2015>
- Tittle, C. R. (2016). Introduction: Theory and contemporary criminology. In A. R. Piquero (Ed.), *The handbook of criminological theory* (pp. 1-17). NJ: Wiley Blackwell.
- Tuan, Y. F. (1977). *Space and place*. Minneapolis: University of Minnesota Press.
- Vilalta, C. J., Lopez, P., Fondevila, G., & Siordia, O. (2019). Testing broken windows theory in Mexico City. *Social Science Quarterly*, 1-10. <https://doi.org/10.1111/ssqu.12760>

- Weinmayr, M. (1969). Vandalism by design: A critique. *Landscape Architecture Magazine*, 286.
- Wilson, J. Q., & Kelling, G. L. (1982). *Broken windows*. Retrieved Jan 06, 2026, from <https://www.theatlantic.com/magazine/archive/1982/03/broken-windows/304465/>
- Wilson, B., Delmas M., & Rajagopal, D. (2025). Behavioral interventions for waste reduction: A systematic review of experimental studies. *Frontiers in Psychology*, 16, 1561467. <https://doi.org/10.3389/fpsyg.2025.1561467>
- Wortley, R., & Mazerolle, L. (2008). Environmental criminology and crime analysis: Situating the theory, analytic approach and application. In R. Wortley & L. Mazerolle (Eds.), *Environmental criminology and crime analysis*. UK: Willan.