

OSM 3.

Site type definitions

Site type	Definition
Archaeological / historic sites	Ancient sites with no modern religious connotations, including Palmyra, Nimrud, Ninevah, Bab Harran, and Qaalat al-Rahbah.
Graves/Cemeteries	Cemeteries and other grouped outdoor locations of internment.
Shrines/Temples	A single burial in a larger tomb, perhaps with dedicated buildings around it.
Mosques	Mosques, jamis, and mosques that contain shrines. The distinction between a mosque and a shrine here is often largely based on name.
Churches	Christian religious buildings, including monasteries.
Other	Sculpture (x1), museum (x1), madrasa (x1).

Categorisations are largely derived from the site name or description used in tweets. We do, however, acknowledge that many overlap, but feel the distinction still aids analysis.

OSM 4.

Rationale for event inclusion

The availability of Twitter data determined the date range of the overall dataset, however, the period also witnessed some of the worst ISIS heritage destruction, creating a significant temporal period for analysis.

Twitter database:

In the Twitter dataset, two native Arabic speakers conducted our training set coding. Intercoder reliability was 0.80 according to Cohen's Kappa. Compared to hand-coded documents in the training set, the root mean square error of the estimates is 1.9%, confirming the accuracy of the results.

Heritage events database:

In this dataset, event date, and date of first major propaganda release were recorded (although the media may follow stories for some time). Data collection was conducted in English: an Arabic speaker checked identified events to confirm when they became public.

The following events were included:

- deliberate attacks on heritage (i.e. ancient and religious) sites;
- suicide attacks (if they occurred in a heritage building);
- the use of heritage destruction as criminal punishment;
- the re-purposing of religious sites (for example, for munitions storage, police headquarters and a gymnasium);
- rumoured attacks were included, as a rumour can affect sentiment at the time of circulation, even if the rumour is later demonstrated to be false;
- although *Dabiq* is published in English, its impact meant it was included.

Many events included in the sample focus on people rather than buildings—for example, suicide bombers targeted communities and their religious buildings together at Friday prayers. Although this may seem a reason to exclude such attacks from the analysis, Bevan (2016) demonstrated numerous examples of the links between attacks on communities and their architecture, as well as the indivisibility of the two.

Damage resulting from conflict was excluded, as were car bombs outside mosques, as they targeted people, not buildings. The authors acknowledge that several suicide attacks at mosques were targeting the associated community rather than the building, and some may have been targeting security forces present in the building (for example, the attack on the mosque in Abha, Saudi Arabia on 6 August 2015), highlighting the indivisibility of the people and the places. Each event was individually assessed for inclusion.

Events which did not have a major news release (e.g. website updates) cannot be considered to have reached wider public consciousness, and were excluded from the Twitter analysis, as were events where no Arabic media release could be confirmed. In this last respect, a mistake was made, regarding the Shrine of al-Imam 'Ali al-Hadi. This site was excluded as no media release could be identified, but Doménovič Domén of Monuments of Mosul in Danger recently informed us of a news release regarding the site's destruction. Palmyra museum destruction occurred during the study period, but the video release occurred after: it is excluded.

A large number of shrines were destroyed during the study period. It has not been possible to identify them all: however, many had no media release and so can be assumed to have had minimal impact on sentiment. It has not been possible to take account of any effect that the aggregated destruction of multiple unnamed shrines may have had; for example, articles such as *Yezidis rebuild 50 percent of shrines destroyed by ISIS* (The Baghdad Post, 2017) indicate that the true number of destroyed sites is much higher, but individual sites cannot be located or assessed.

Information was collected on 121 events: 85 were attributed to ISIS, including three rumours, leaving 82 actual events. Of the 85 events attributed to ISIS, 60 had at least one media release, including the rumoured events, which impacted sentiment. These formed the final study set. Of these, 3 were rumours; 15 had photos which could not be confirmed as the stated site¹; and 16 could not be confirmed at all. Only 31 events appear to have actually been claimed by ISIS, including 4 photos with an unclear origin which is thought to be ISIS.

¹ Dr Sam Hardy has compiled numerous examples of media use of photos that are not of the site in question, so each event must be checked by experts - see the Conflict Antiquities Blog (<https://conflictantiquities.wordpress.com/>)

** An unnamed Church in Al-Shaddadi, which was turned into a gym for ISIS members, was accidentally excluded from the sentiment analysis, as was Mart Maryam Armenian Orthodox Church. However, they are included in the event counts for completeness.

References

BEVAN, R. 2016. *The Destruction of Memory. Architecture at War*. London: Reaktion Books.

The Baghdad Post. 2017. *Yezidis rebuild 50 percent of shrines destroyed by ISIS*. The Baghdad Post, 10 June 2017. Available at:

<http://www.thebaghdadpost.com/en/story/11896/Yezidis-rebuild-50-percent-of-shrines-destroyed-by-ISIS> [Accessed 25 July 2017]

OSM 5.

Search query employed to recover data from Twitter:

((و قار ع ل ا ي ف ة ي م ا ل س ا ل ا ة ل و د ل ا ")
ال شام " RO "منظمه ال توحيد و ال جهاد "
OR "يروشل سل حمل نيدها جم " OR "
شيل" اب و مسعد الزرقاوي" RO
" ة ي م ل ا ع د ا ه ج ه ل ك ر ح " ال خوري " RO
" ي د ا د غ ب ل ا ر ك ب و ب ا ه ف ي ل خ " OR
OR " ا ع د ا ل ا ن ف ص ا ل ي ي ن ع ن ا ل ة " OR " خ ل ي ف ه "
"الدولة الإسلامية" OR " في العراق و سوريا
OR "القاعده" OR "الدولة الإسلامية"
OR "شعاد" OR ISIS OR ISIL OR "
ال دولة الإ سلامية " RO "ال دولة
" OR "ية في العراق والشام إلى سلام
الدولة الإسلامية في العراق " OR "داعش
"OR "Abu
Bakr al-Baghdadi" OR "al-
Baghdadi" OR "أبو بكر البغدادي" OR
ي د ا د غ ب ل ا ر ك ب و ب ا " OR "ء ا ع د و ب ا "
ال ح س د ي ن ي ال ه ا ش م ي ال ق ر ش ي " RO
OR "ي د ا د غ ب ل ا ل ت ق " OR " ة ف ي ل خ ل ا "
AND ") القاعده " OR "البغدادي-ل-تق"
ق ب و ر OR ق ب ر OR ح ر م OR م ق د س OR و ا ل ي)
م ق ب رة OR م د ف ن OR م ق ا م ا ت OR م ق ا م
OR "شَاهِدُ الْقَبْرِ" OR م ق ا ب ر OR م د ا ف ن
م د ف ن " RO م ق ب رة ق ب ر RO "ق ب و ر
OR ة ي ن ي س ح OR ر ب ا ق م OR ن ف ا د م OR
م س ج د RO ج ا م ع RO م س ا ج د RO ج و ا م ع
ر ا ي د ا OR ر ي د OR ت ا ر ا ن م OR ة ر ا ن م OR
OR ب ا ت ك OR ت ا ع ل ق OR ة ع ل ق OR
ك ت ب RO م ك ت بة RO م ك ت ب ا ت RO
م ت ح ف RO م ت ا ح ف RO ن ص ب RO
ن م ث ا ل RO ن ص و ب RO ت م ا ث ي ل RO
ن ح ت RO ب و ا ب اة RO ب و ا ب ا ت RO ق ص ر
OR ن و ص ح OR ر و ص ق OR ن ص ح OR

"Islamic State of Iraq and al-Sham" OR "organization
Tawhid and Jihad" OR "the Mujahideen Shura
Council" OR "Abu Massad Al-Zarqawi" OR "Laith al-
Khouri" OR "movement Jihad global" OR "Khalifa
Abu Bakr al-Baghdadi" OR "Khalifa "OR" separatists
for al-Qaida in Iraq and Syria, "OR" Islamic state "OR"
rule "OR" Islamic state. "

OR "Daesh" OR ISIS OR ISIL OR "Islamic state" OR
"Islamic state in Iraq and the Levant" OR "Daesh" OR
"Islamic state in Iraq and the Levant" OR "lingering
expands with" OR "Abu Bakr al-Baghdadi" OR "al -
Baghdadi "OR" Abu Bakr al-Baghdadi, "OR" Abu
Duaa "OR" Abu Bakr al-Baghdadi al-Husseini al-
Qurashi al-Hashemi "OR" Caliph "OR" the killing of
al-Baghdadi, "OR" kill-Baghdadi "OR" the base ")
AND (Wali OR sacred OR campus OR tomb OR
graves OR shrine OR shrines OR cemetery OR OR
cemetery burials OR graves OR "tombstone" OR tomb
OR "graves cemetery" OR cemetery OR landfills OR
graves OR Hussienieh OR mosque OR mosque OR
mosques OR mosques OR beacon OR beacons OR
monastery OR monasteries OR Castle OR Qlat OR
book OR books OR OR Library OR museum libraries
OR OR museums monument OR statue OR rectifying
OR statues OR carving OR gate OR OR Palace gates
OR Fort OR palaces OR forts OR wall OR wall OR
palace OR palaces OR held OR OR arc "archaeological
site" OR "archaeological sites" OR "cultural heritage"
OR Heritage OR effects last OR OR culture OR history
OR Nimrod OR "role Sharukin" OR urban OR destroy

جدار RO جدران RO قَصْر RO قَصْر
" يِريثْ أَعْقُوم " OR سِوق OR دِقْع
"التراث الثقافي" OR "تِريثْ أَعْقُوم"
OR الماضي OR الأثار OR التراث
دور " OR النمرود OR التاريخ OR الثقافة
أشور OR تدمر OR الحضر "OR شروكين
OR "مَادَّةٌ مُتَفَجِّرَةٌ" OR قُنْبُلَةٌ OR نِينوى
OR قُرس OR تَحْرِيب OR جَرَّافَةٌ

OR Assyria OR Nineveh OR bomb OR "explosive
material "OR bulldozer OR OR sabotage theft