



## Cultural Resilience in Conditions of Uncertainty: Technological, Environmental, Social, and Epistemic Dimensions

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### Abstract

This note explores the concept of “cultural resilience” as a dynamic and multidimensional process within archaeological and heritage studies, encompassing technological, environmental, social, and epistemic dimensions. The core context and primary catalyst for this analysis are the recent escalating conflicts and crises in West Asia, an urgent situation that once again highlights the necessity of re-evaluating the concepts of vulnerability and the continuity of cultural structures under acute crisis conditions. Drawing upon critical and post-processual archaeological perspectives, contemporary epistemic challenges are articulated, particularly the concentration of cultural data within global institutions and the imperative of “repatriating knowledge to source communities” to maintain interpretive authority. In this regard, six case studies from the *Iranian Journal of Archaeological Studies* (IJAS) are introduced, illustrating various manifestations of this adaptation and sustainability across the Iranian Plateau and neighbouring regions (including: continuity in ceramic technology, knowledge management in early administrative systems, environmental adaptation of subsistence, ritual stability during transitional periods, the spatial organizational flexibility of mobile societies, and the reinterpretation of ancient architectural knowledge). Ultimately, the note concludes that the sustainability of cultural heritage in conditions of uncertainty requires a shift from centralised structures toward participatory and polyphonic models. To this end, the establishment of local heritage associations is proposed as an effective mechanism for decentralisation, restoring epistemic justice, and enhancing the agency and rapid response capacities of source communities during crises.

**Keywords:** Cultural Resilience, Regional Crises, Epistemic Justice, Source Communities, Participatory Heritage Management.

**Article Type:** Editorial Note

### Introduction

In the contemporary era, cultural heritage is increasingly confronted with unprecedented challenges that extend far beyond the natural decay of materials. The recent escalation of geopolitical tensions and armed conflicts across West Asia serves as a stark reminder that archaeological sites and cultural landscapes are not isolated remnants of the past, but active components of a highly volatile present. These crises have fundamentally reshaped our understanding of heritage, shifting the scholarly focus from passive preservation to dynamic endurance. It is within this critical and urgent context that the concept of “cultural resilience” emerges as a vital theoretical and methodological framework.

Cultural resilience is not a static state of preservation; rather, it is a historically situated, continuously evolving process of adaptation, reinterpretation, and regeneration through which human societies navigate uncertainty, rupture, and systemic stress (Redman 2005).

To comprehensively understand how resilience operates, heritage studies must adopt a holistic perspective that bridges the material and the immaterial. This resilience manifests across multiple deeply interwoven domains: technological systems that preserve material memory, environmental strategies that ensure subsistence continuity, social structures that maintain ritual stability, and epistemic frameworks that govern the production of knowledge. However, as contemporary societ-



ies face physical displacement and geopolitical crises, an equally acute challenge emerges within the academic sphere: the epistemic centralization of cultural data within global institutions, detached from its contexts of origin. Redefining cultural resilience, therefore, is inextricably linked to the pursuit of epistemic justice, ensuring that local and source communities retain their interpretive authority and active agency. By examining the diverse trajectories of adaptation in the Iranian Plateau and neighbouring regions, this issue of the *Iranian Journal of Archaeological Studies* (IJAS) aims to demonstrate how decentralized, participatory, and polyphonic models of heritage governance can empower communities to safeguard their shared past and navigate an increasingly unstable world.

### **The Epistemic Challenge in Heritage Studies**

In the contemporary context marked by the escalation of geopolitical tensions and the occurrence of armed conflicts across West Asia, questions concerning the vulnerability and resilience of cultural heritage have once again become central to archaeological and heritage studies (Aronson *et al.* 2025). These conditions reflect a fundamental shift in perspective: cultural heritage can no longer be regarded as a marginal or purely technical domain, but must instead be understood as an inseparable component of broader systems of social resilience, systems in which technology, environment, social organisation, and knowledge production are deeply interwoven (Ripp *et al.* 2024). Within this framework, recent theoretical advances in post-processual and critical archaeology emphasise that cultural resilience is not a static condition, but rather a historically situated and continuously evolving process of adaptation, reinterpretation, and transformation (Løvschal 2022). Resilience operates simultaneously at both material and immaterial levels, encompassing production technologies, subsistence strategies, institutional structures, and systems of meaning-making (Hodder 2012; Mlekuž Vrhovnik 2026). From the perspective of critical archaeology, these dynamics are understood as historically contingent processes in which meaning, materiality, and social practice are constantly reconfigured through power relations and interpretive frameworks (Shanks and Tilley 1987; Hodder 2012).

At the same time, contemporary heritage studies face an epistemic challenge: the concentration of archaeological data and cultural knowledge within global institutions, often spatially and conceptually separated from their communities of origin (Smith 2006; Cuno 2011). Major museum collections and research infrastructures, including institutions such as the Metropolitan Museum of Art, demonstrate how cultural data are reclassified, archived, and analysed within global epistemic frameworks, while becoming partially detached from their original social and cultural contexts (Bennett 1995; Appadurai 1996). Recent debates on the “repatriation of knowledge to source communities”, extending beyond the physical return of artefacts to include the return of interpretive authority, represent an emerging ethical and methodological imperative in heritage studies (Boast 2011; Atalay 2012). This concern resonates with arguments within contemporary archaeology that emphasize the ethical responsibility of archaeologists in the production and interpretation of knowledge, rather than relying solely on scholarly authority (Mortazavi 2010). This dimension of cultural resilience concerns not only the preservation of material remains, but also the maintenance of local agency in the production of archaeological knowledge (Hodder 2012; Lydon and Rizvi 2016).

### **Material, Environmental, and Social Dimensions: The Current Issue Articles**

The contributions presented in this issue of the *Iranian Journal of Archaeological Studies* (IJAS) can be interpreted within this broader framework of cultural resilience, with each study illuminating different dimensions of adaptive continuity across time and space.

#### **1. Technology as Material Memory**

This article employs X-ray diffraction (XRD) analysis to examine ceramic assemblages from the Jalandhar Doab region in India. Their findings reveal long-term continuity and variation in ceramic firing technologies spanning from the Late Harappan to the Early Medieval periods. Despite relatively stable firing temperature ranges, variations in mineralogical composition indicate continuous experimentation in raw material selection and production strategies. These results demonstrate ceramic

technology as a dynamic system of accumulated knowledge and adaptive practice rather than a static tradition.

## **2. Early Administrative Systems and the Governance of Knowledge**

The analysis of a newly examined Proto-Elamite tablet housed in the State Hermitage Museum provides important insights into early systems of accounting and socio-economic organisation in southwestern Iran. The inscription, which records the management of small livestock, demonstrates that early writing functioned not merely as a communicative tool, but as a mechanism for structuring economic control and administrative complexity. This case highlights the foundational role of knowledge systems in the formation of early states.

## **3. Environmental Adaptation and Subsistence Resilience in the Central Iranian Plateau**

The bioarchaeological study of the Qoli Darvish site in the Qom Plain reconstructs subsistence strategies and palaeoenvironmental conditions during the third and second millennia BCE. The evidence indicates that the region experienced a significantly more humid climate than today, enabling mixed agro-pastoral economies. Faunal and botanical datasets demonstrate that ancient communities maintained ecological resilience through flexible resource exploitation strategies.

## **4. Social Organisation and Ritual Stability in the Iron Age**

Excavations at the western cemetery of Qareh Tepe, Segzabad, reveal structured burial patterns and associated cultural assemblages dating to the early first millennium BCE. The relative homogeneity of grave goods and spatial organisation suggests socially cohesive groups with shared ritual systems. These patterns highlight the role of symbolic systems in maintaining social stability during periods of regional transition.

## **5. Decentralised Spatial Organisation and Mobile Societies**

Research on Site No. 19 in the Cham-e Shir Dam area demonstrates adaptive spatial and architectural strategies of semi-nomadic communities during the Islamic period. The architectural characteristics of the site indicate flexible and modular forms of habitation, likely enabling rapid responses to environmental and political conditions. These patterns

represent a historical example of decentralised resilience in mobile societies.

## **6. Architectural Continuity and the Reinterpretation of Technical Knowledge**

The study of the Arch of Ctesiphon (Taq-e Kasra) re-evaluates Sasanian architectural engineering through digital reconstruction and geometric analysis. The results indicate continuity in measurement systems and structural principles derived from Achaemenid traditions. Rather than representing mere stylistic imitation, the monument reflects a complex process of cultural and technical reinterpretation, in which earlier systems of knowledge were transformed within new imperial contexts.

## **Discussion and Conclusions**

Collectively, the contributions in this issue demonstrate that cultural resilience in the Iranian Plateau and surrounding regions should be understood as a multi-layered phenomenon operating simultaneously across technological, environmental, social, and epistemic domains. This resilience is not a static condition, but a continuous historical process of adaptation, reinterpretation, and regeneration in response to changing natural and social circumstances. Within this framework, an important and growing dimension in contemporary heritage studies is the role of local communities as active agents in the protection, interpretation, and reproduction of cultural heritage. Evidence suggests that the sustainability of cultural heritage cannot be ensured solely through centralised governmental or international institutions, but is also dependent on local capacities for organisation, participation, and rapid response in both ordinary and crisis conditions.

From this perspective, the establishment and strengthening of local heritage associations as participatory structures involving local communities, specialists, and administrative institutions can serve as one of the most effective mechanisms of cultural resilience at the local scale. Such associations not only contribute to documentation and heritage protection, but also play a crucial role in the production of local knowledge, the transmission of cultural memory, and the enhancement of social agency in relation to heritage. In conditions of environmental, political, and social uncertainty, these structures function as a layer of decentralised cultural resilience.

Furthermore, the integration of academic knowledge, museum institutions, and local heritage associations forms a participatory model of cultural heritage governance, in which knowledge production and heritage protection are transformed from a unidirectional and hierarchical process into an interactive and polyphonic one. In this context, rethinking the relationship between global knowledge institutions and source communities, including debates surrounding the concentration of cultural data in major international museums, becomes central to redefining epistemic justice in heritage studies.

At a broader analytical level, archaeology within this framework is not limited to reconstructing the past, but contributes to understanding the mechanisms through which human societies have demonstrated resilience in the face of uncertainty (Mortazavi 2018), rupture, and transformation. As such, it offers valuable insights into contemporary debates on cultural sustainability, epistemic justice, and the future governance of heritage in an increasingly unstable world.

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