

The Practicability Turn

A New Methodological Perspective for Premodern History

Management Summary:

The Practicability Turn redefines how ancient history can access the past. By integrating practice-based reconstruction into scholarly inquiry, it opens up domains of historical experience that have long remained beyond the reach of text-based analysis.

Through experimentally grounded feasibility studies, it transforms reconstruction into a systematic tool of knowledge production—linking interpretation with material verification.

As the nucleus of an emerging European research network, the approach combines scientific innovation, interdisciplinary collaboration, and public engagement, establishing a new model for historically grounded, socially relevant research.

1. History and Disciplinary Background

Historical scholarship—especially ancient history—has traditionally been strongly text-centered. Written sources form the primary basis of historical knowledge. This methodological focus has enabled great analytical precision, but at the same time implicitly marginalized other approaches.

Material reconstructions, practical reenactments, or hands-on experiments were long considered marginal or deemed insufficiently scientific. The concrete engagement with objects, production processes, or everyday practices thus often remained outside the narrower methodological canon.

Archaeology is an important exception. It—especially in experimental archaeology—opened itself early to practice-based approaches to knowledge. Here, production processes, contexts of use, and functions of material culture are systematically reconstructed and tested.

Prominent examples demonstrate the potential of this approach:

- Olympias: Reconstruction of an ancient Athenian trireme and an important example of experimental archaeology
- Guédelon Castle: Reconstruction of a medieval castle using historical techniques as a long-term experiment
- Viking Ship Museum Roskilde: Reconstruction and testing of Viking-era ships under real-world conditions

These projects have impressively demonstrated that practical reconstruction does not contradict scientific inquiry, but rather opens up additional and independent avenues of knowledge.

At the same time, they also point toward further methodological potential. In many cases, the focus lies—deliberately and productively—on the reconstruction and testing of specific techniques, materials, and processes. This has generated highly valuable, detailed insights into historical craftsmanship and material culture, while leaving open the question of how these results can be more systematically integrated into broader historical interpretation.

2. Problem Statement and Methodological Expansion: The Practicability Turn

Lack of Sources as a Structural Problem

In all historical disciplines that deal with the “pre-modern history” of humanity, such as archaeology, art history, or history, the source situation is fundamentally asymmetrical:

Tradition privileges elites, while everyday practices, craft processes, and the lived realities of broader segments of the population are often only fragmentarily documented or not documented at all.

This gap is not only an empirical but also a methodological problem. A purely text-based analysis or an analysis limited to the few remaining artefacts cannot answer many central questions about pre-modern societies.

Necessity of Methodological Opening

This is where the Practicability Turn comes in. It transfers—in a critically reflected form—key elements of experimental and reconstructive methods from archaeology to historical studies, particularly ancient history. The goal is not replacement, but expansion and enhancement: written sources, original artefacts, and material fragments not only remain central, but gain further significance by being complemented through systematically generated, practice-based forms of evidence.

Core of the Approach

The Practicability Turn develops the “reconstructive feasibility study” as its methodological core:

- Systematic reconstruction of historical production processes
- Practical replication under controlled conditions
- Scientific evaluation, empirical tests in historically plausible settings, and comprehensive documentation
- Continuous critical reconnection to source criticism and historical context through explicitly formulated overarching questions

This integrates approaches from living history and experimental archaeology, while explicitly distancing itself from idealizing, uncritical, or purely illustrative practices.

Building on existing experimental approaches, the Practicability Turn extends their analytical horizon by consistently linking reconstruction and testing to broader historical questions: questions of economic capacity, technological organization, social structures, and political systems.

Crucially, these studies do not aim to “recreate the past” in a definitive sense. Rather, they operate as controlled experimental settings in which historically grounded hypotheses about processes, techniques, and constraints can be tested.

In this perspective, the reconstruction of the abovementioned Athenian trireme, for example, is not only a technical or maritime experiment. It becomes a means of investigating the material preconditions of naval supremacy, the resource demands of maintaining large fleets, and the structural interdependencies between military organization and democratic governance.

By embedding practice-based reconstruction within explicitly formulated historical problem frameworks, the Practicability Turn transforms detailed experimental results into contributions to larger interpretive debates. In doing so, it retains the strengths of experimental archaeology while enhancing their relevance for core questions of historical research.

Epistemic Contribution

The Practicability Turn does not merely illustrate existing knowledge; it generates new forms of evidence that can always be verified intersubjectively.

By reconstructing and testing historical production processes under controlled conditions, it becomes possible to identify constraints, affordances, and decision-making logics that remain inaccessible through textual sources alone.

In this sense, reconstructive feasibility studies function as a form of experimental hermeneutics: they do not replace interpretation, but deepen it by grounding it in materially and functionally verifiable insights.

This approach enables scholars to:

- Evaluate the plausibility of historical descriptions and assumptions
- Identify tacit knowledge embedded in craft practices
- Reconstruct chains of action and decision-making processes
- Refine existing models of economic, technological, and social organization

The result is a qualitatively expanded evidentiary basis for historical research.

Methodological Positioning

The Practicability Turn is not conceived as a departure from established historical methodology, but as its extension under conditions of limited source availability.

All reconstructions are:

- Explicitly grounded in available archaeological, textual and pictorial evidence
- Documented in a transparent and reproducible manner
- Critically evaluated against both material constraints and historical plausibility

Their results are therefore not presented as definitive reconstructions, but as experimentally tested hypotheses about historical processes.

Written sources remain indispensable for framing, guiding, and critically assessing all reconstruction processes. Practicability studies thus operate in a complementary relationship to established hermeneutic methods.

In this sense, the Practicability Turn should be understood as a methodological enrichment that allows the discipline to engage more fully with the material and practical dimensions of past societies. It provides benefits not only for historical scholarship, particularly in fields with limited source bases, but also for neighboring disciplines concerned with pre-modern societies.

The methodologically structured empirical expansion—through the historically grounded reconstruction and testing of craft processes—enhances historical analysis by making previously inaccessible dimensions operational. At the same time, the integration of overarching historical questions elevates individual findings from technical, archaeological, or experimental contexts into contributions of broader historical significance.

In this way, the Practicability Turn fosters a systematic and mutually reinforcing exchange between disciplines: historical research gains empirical depth, while contributing its theoretical frameworks to contextualize and amplify findings from the natural sciences, engineering, and craft-based research.

Institutional and Intellectual Context

The development of the Practicability Turn at a German research institution is not incidental. It is rooted in a long-standing intellectual and technical tradition that closely links understanding with making.

The international reputation of German engineering is based not only on technical excellence, but on a specific epistemic culture: complex systems are understood through their construction, their constraints, and their material realization. This perspective aligns closely with the methodological premise of practicability studies.

In this sense, the Practicability Turn translates a well-established mode of knowledge production—learning through controlled making—into the domain of historical research. It provides a structured framework in which reconstruction is not an auxiliary activity, but a central epistemic tool.

The institutional environment at Friedrich-Alexander-Universität Erlangen-Nürnberg, with its strong connections between the humanities, engineering sciences, and applied research, offers particularly favorable conditions for anchoring and advancing this approach.

An Emerging Research Network

The Practicability Turn is already embedded in a growing international network that brings together diverse disciplines and expertise:

- Museums and research institutions (including Roman-Germanic research in Mainz)
- Universities specializing in history, archaeology, technology, and psychology
- Technical disciplines (e.g., design, metrology, fluid dynamics)
- Heritage conservation and state archaeological offices
- International partners in Europe and the USA
- Craft businesses and specialized workshops

This network includes stakeholders from Germany, Croatia, Hungary, Slovakia, Austria, Denmark, Turkey, the UK, and the USA. It combines theoretical reflection, practical implementation, and technological analysis.

The collaboration encompasses the following areas:

- Reconstruction of ancient ships and vehicles, weapons and artillery
- Material and stress tests
- Analysis of ancient production processes
- Reconstruction of craft techniques (e.g., metal, textiles, construction)
- Research on perception and impact (e.g., ancient color schemes)

The Practicability Turn is therefore not an isolated approach, but the focal point of existing, yet previously methodologically dispersed, activities. It provides a conceptual framework that enables comparability, cumulative knowledge production, and long-term institutional integration.

Within this framework, the interaction between research areas is not additive, but mutually reinforcing. Insights gained in one domain inform and refine research in others, creating a dynamic and cumulative process of knowledge production.

For example, the reconstruction of ancient painting techniques—often only fragmentarily preserved—can contribute to understanding functional aspects such as visibility, protection, or camouflage, which in turn inform the analysis of objects such as ships or shields. Similarly, experimental modifications in one field (e.g., boat construction or rigging) can expand the interpretive scope of findings by revealing alternative uses, performance ranges, and systemic interdependencies.

In this way, the Practicability Turn establishes a networked research logic in which individual experiments do not remain isolated case studies, but become transferable contributions to a broader understanding of pre-modern societies.



3. Outlook: Establishing a European Research and Transfer Platform

Scaling and Networking

The greatest potential of the Practicability Turn lies in its scalability.

Existing collaborations can be strategically expanded into a European research community.

Obvious points of contact include:

- Viking Ship Museum Roskilde (ship reconstruction and testing, particularly in the context of Nydam)
- Archaeological and museum-based networks in Germany (e.g., Trier, Hamburg, Haltern)
- Maritime archaeology in Great Britain (e.g., Southampton)
- Heritage preservation and educational institutions at the state level
- Guédelon Castle as a model for long-term reconstruction projects

Another strategic option is to connect with larger research consortia, such as those associated with Leibniz research museums (e.g., the Germanisches Nationalmuseum).

Added Value for Scholarship

The Practicability Turn opens up several key development perspectives for historical scholarship:

- Methodological innovation: Expanding the evidentiary spectrum through experimentally grounded, practice-based methods
- Empirical depth: Access to previously underexplored dimensions of pre-modern life
- Interdisciplinarity: Systematic and mutually enriching integration of humanities, natural sciences, engineering, and craft-based knowledge
- Research-led teaching: New training formats at the interface of theory and practice
- Science communication: Direct translation of research into tangible societal experience

The Practicability Turn not only introduces experimentally grounded approaches into historical scholarship, but also provides collaborating disciplines with a historically contextualized framework in which their methods, models, and materials can be tested, evaluated, and meaningfully extended.

Societal and Strategic Benefits

Beyond the discipline itself, significant added value arises:

- Strengthening the visibility and relevance of historical research
- New forms of participation and knowledge transfer
- Impulses for crafts, heritage preservation, and cultural sustainability
- Development of resilient regional and international networks

The Practicability Turn thus connects what is often separated in scholarship: knowledge, application, and communication.

Addendum: Selected publications and references

Theory (Empirical studies and application on history no 3, 35, 37, 45-49)

- 1) Apel, K.-O., 1990. *Diskurs und Verantwortung. Das Problem des Übergangs zur post-konventionellen Moral*. Frankfurt am Main: Suhrkamp Verlag.
- 2) Assmann, A., 2006. *Der lange Schatten der Vergangenheit: Erinnerungskultur und Geschichtspolitik*. München: C.H. Beck.
- 3) Carbon, C.-C., 2022. *Über die Wahrnehmung und Wirkung von Römerbooten: Zwischen Camouflage, Überraschung und Terror*. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.333-349.
- 4) Caysa, V., 2015. *Empraktische Vernunft*. Bern: Peter Lang GmbH Internationaler Verlag der Wissenschaften.
- 5) Coates, J., McGrail, S., Brown, D., Gifford, E., Grainge, G., Greenhill, B., Marsden, P., Rankov, B., Tipping, C. and Wright, E., 1995. *Experimental Boat and Ship Archaeology: Principles and Methods*. *International Journal of Nautical Archaeology* 24. pp.293-301.
- 6) Crumlin-Pedersen, O. and McGrail, S., 2006. *Some Principles for the Reconstruction of Ancient Boat Structures*. *International Journal of Nautical Archaeology* 35(1). pp.53-57.
- 7) Crumlin-Pedersen, O., 1995. *Experimental archaeology and ships – bridging the arts and the sciences*. *International Journal of Nautical Archaeology* 24(4). pp.303-306.
- 8) Daston, L. and Galison, P., 2007. *Objectivity*. Cambridge: Zone Books 2007.
- 9) De Weerd, M.D., 2001. *Römische Schiffsfunde von Zwammerdam. Lehren aus einer alten Grabung*. *Skyllis* 4. pp.96-110.
- 10) Diets, H., Nungesser, F., Pettenkofer, A., ed., 2017. *Pragmatismus und Theorien sozialer Praktiken. Vom Nutzen einer Theoriedifferenz*, Frankfurt am Main: Campus Verlag.
- 11) Faber, H.-G., 1982. *Theorie der Geschichtswissenschaft*, 5th edition. München: Beck.
- 12) Fabian, J., 1983. *Time and the Other: How Anthropology Makes its Object*. New York: Columbia University Press.
- 13) Gadamer, H.-G., 1965. *Wahrheit und Methode. Grundzüge einer philosophischen Hermeneutik*. 2nd edition. Tübingen: J. C. B. Mohr (Paul Siebeck).
- 14) Gumbrecht, H.U., 2004. *Diesseits der Hermeneutik. Die Produktion der Präsenz*. Berlin: Suhrkamp Verlag.
- 15) Goodburn, D.M., 1993. *Some further thoughts on reconstructions, replicas and simulations of ancient boats and ships*. *International Journal of Nautical Archaeology* 22(3). pp.199-203.
- 16) Grzesik, J., 1996. *Textverstehen lernen und lehren - Geistige Operationen im Prozeß des Textverstehens und typische Methoden für die Schulung zum kompetenten Leser*. 2nd edition. Stuttgart: Klett-Verl. für Wissen und Bildung.
- 17) Habermas, J., 1967. *Zur Logik der Sozialwissenschaften*. Tübingen: Mohr.
- 18) J. Habermas, 1973. *Erkenntnis und Interesse*. 2nd edition with a new afterword. Frankfurt/Main: Suhrkamp Verlag.
- 19) Habermas, J., 1985. *Der philosophische Diskurs der Moderne*. Frankfurt am Main: Suhrkamp Verlag.
- 20) Haude, B., 2015. *Krieg als Hobby? Das Leipziger Völkerschlacht-Reenactment und der Versuch einer Entgegnung*. *Forum Kritische Archäologie* 4. pp.1-12. Available at: https://www.kritischearchaeologie.de/repositorium/fka/Forum_Kritische_Archaeologie_2015_4.pdf [Accessed 20 March 2026].

- 21) Hillebrandt, F., 2014. *Soziologische Praxistheorien. Eine Einführung*. Wiesbaden: Springer VS.
- 22) Hölscher, T., ed., 2015. *Klassische Archäologie. Grundwissen*. 4th ediditon. Darmstadt: Verlag Philipp von Zabern.
- 23) Huinzinga, J., 1942. *Über eine Definition des Begriffs Geschichte*. In: J. Huinzinga ed., 1942. *Im Bann der Geschichte. Betrachtungen und Gestaltungen*. Amsterdam: Akademische Verlagsanstalt Pantheon.
- 24) Keupp, J., 2017. *Die Gegenstandslosigkeit des Materiellen: Was den material turn zum Abtörner macht. Mittelalter. Interdisziplinäre Forschung und Rezeptionsgeschichte*. Available at: <https://mittelalter.hypotheses.org/10617> [Accessed 12 March 2026].
- 25) Marsden, P., 1993. *Replica versus reconstruction*. *International Journal of Nautical Archaeology* 22(3). pp.206-207.
- 26) McGrail, S., 1992. *Replicas, reconstructions and floating hypotheses*, *International Journal of Nautical Archaeology* 21(4). pp.353-355.
- 27) Meucci, C., Pagano, M., Bertocchi, A., Cami, R., Procaccio, A., Indirli, M., Forni, M., Clemente, P., Paciello, A., Ahmadi, H. and Fuller, K., 2001. *The Use of an Innovative 3D-Isolation System for Seismic and Ambient Vibration to Protect the Roman Ship Excavated at Ercolano*. 7th International Seminar on Seismic Isolation, Passive Energy Dissipation and Active Control of Vibrations of Structure. Assisi, Italy, Conference Proceedings 2001. Available at: <https://www.researchgate.net/publication/259890545> [Accessed 21 Mach 2026].
- 28) Petersson, B., Narmo, L.E., eds., 2011. *Experimental Archaeology. Between Enlightenment and Experience*. *Acta Archaeologica Lundensia Series in 8°, Volume 62*. Värnamo: Elanders/Fälth & Hässler.
- 29) Reckwitz, A., 2003. *Grundelemente einer Theorie sozialer Praktiken. Eine sozialtheoretische Perspektive*. *Zeitschrift für Soziologie* 32(4). pp.282-301.
- 30) Roberts, G., ed., 2001. *The History and Narrative Reader*. New York: Routledge.
- 31) Rothacker, E., 1954. *Die dogmatische Denkform in den Geisteswissenschaften und das Problem des Historismus*. Wiesbaden: Steiner Verlag.
- 32) Schäfer, H. 2013. *Die Instabilität der Praxis. Reproduktion und Transformation des Sozialen in der Praxistheorie*. Weilerswirst: Velbrück Wissenschaft.
- 33) Schäfer, H., ed., 2016. *Praxistheorie. Ein soziologisches Forschungsprogramm*. Bielefeld: Transcript.
- 34) Schatzki, Th., Knorr-Cetina, K. and von Savigny E., ed., 2001. *The Practice Turn in Contemporary Theory*. New York: Routledge.
- 35) Schmädecke, M. and Krekel, Chr., 2022. *Das Bindemittelsystem der Enkaustischen Malerei auf Schiffen: eine kunsttechnologische Quellenanalyse*. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.311-332.
- 36) Schubert, M., 2010. *Materialität in der Editionswissenschaft*. Berlin: de Gruyter.
- 37) Speck, M. and Schäfer, Chr., 2022. *Enkaustik – Farbe für die Fridericiana Alexandrina Navis (F.A.N.), Versuch einer antiken Gestaltung*. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.295-310.
- 38) Steffy, J.R., 1994. *Wooden Ship Building and the Interpretation of the Shipwrecks*. College Station: Texas A & M University Press.
- 39) Tang, B., 2026. *Thoughts on the Concepts and Methods of Experimental Archaeology*. EXARC 2026(1). Available at: <https://exarc.net/ark:/88735/10827> [Accesses 21 March 2026].

- 40) Thomas, J., 2004. *Archaeology and Modernity*. London: Routledge.
- 41) Warnking, P., 2015. *Der römische Seehandel in seiner Blütezeit. Rahmenbedingungen, Seerouten, Wirtschaftlichkeit. Pharos. Studien zur griechisch-römischen Antike. Volume 36.* Rahden/Westf.: Verlag Marie Leidorf.
- 42) Weischer, Chr., 2022. *Stabile Ungleichheiten. Eine praxeologische Sozialstrukturanalyse*. Wiesbaden: Springer VS.
- 43) Welskopp, Th., 2014. *Unternehmen Praxisgeschichte. Historische Perspektiven auf Kapitalismus, Arbeit und Klassengesellschaft*. Tübingen: Mohr Siebeck.
- 44) Welskopp, Th., Reichardt, S., Haasis, L. and Rieske, C., 2015. *Historische Praxeologie – Dimensionen vergangenen Handelns*. Paderborn: Schöningh Verlag.
- 45) Dreyer, B., 1998. *Vom Buchstaben zum Datum. Einige Bemerkungen zur aktuellen 'Steinschreiberforschung'*. *Hermes* 126. pp.276-296.
- 46) Kaiser, A. and Dreyer, B., 2021. *Danuvina Alacris*. In: WMB Weinviertel Museum Betriebs GmbH, eds., 2021. *Experimentelle Archäologie. Mistelbach 2021*, 82-87.
- 47) Dreyer, B. and Speck, M., 2021. *Farbe und Intention. Rekonstruktion antiker enkaustischer Bemalung auf der F.A.N. und DANUVINA ALACRIS*. *Skyllis* 21. pp.62-71.
- 48) Stamminger, M., Rückert, D. and Gatterig, B. and Dreyer, B., 2022. *Die F.A.N. virtuell besuchen und testen: Graphische Datenverarbeitung, Numerik und das Römerboot*. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp. 499-514.
- 49) Dreyer, B., Kaiser, A., Woller, R. and Jelusic, M., 2022. *Die spätantike Danuvina alacris (navis) im Projekt Living Danube Limes*. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.556-581.

Empirical Studies

Example boats

- 1) Dreyer, B., 2018a. *Die Fridericana Alexandrina Navis (F.A.N.) - Nachbau sowie wissenschaftliche Erprobung und Einordnung der Replik von Oberstimm II - Stand des Baus*. *Skyllis* 17(1). pp.87-96.
- 2) Dreyer, B., 2018b. *Nachbau und Wissenschaft - die Fridericana Alexandrina Navis (F.A.N.)*. *Limes* 12(1-2). pp.30-37.
- 3) Dreyer, B., 2018c. *Oberstimm: römisches Schnellboot kehrt zurück*. *Archäologie in Deutschland* 4. pp.64-65.
- 4) Dreyer, B., 2019a. *Römerboote im Altmühlsee unterwegs*. *Bayerische Archäologie* 3. pp.48-53.
- 5) Dreyer, B., 2019b. *The Fridericana Alexandrina Navis. Rebuilding the past, improving Knowledge*. *Ancient Warfare* 12(4). pp.51-57.
- 6) Dreyer, B., 2021a. *Ein neues römisches Donauboot wird gebaut. Das EU Interreg DTP Projekt 'Living Danube Limes'*. *DI - Denkmal Information Bayern* 176. pp.43-47.
- 7) Dreyer, B., 2021b. *Principles and Progress in the Shipbuilding Part of the Eu Interreg DTP Project 'Living Danube Limes'*. *Akademieschrift: Bauwesen/Architektur* 49. Budapest 2021, 171-208.
- 8) Dreyer, B., ed., 2022a. *Die Fridericana Alexandrina Navis (F.A.N.). Ein Römerboot auf dem Prüfstand bei Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic.

- 9) Dreyer, B., 2022b. Bautagebuch für die F.A.N In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.27-69.
- 10) Dreyer, B., 2022c. Eine F.A.N.-Story – ein wissenschaftliches Abenteuer (2018 – Tagebuch), In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.351-379.
- 11) Dreyer, B. and Gattermig, B., 2019. A Scientific Adventure. Testing a F.A.N.-Theory. *Ancient Warfare* 13(2). pp.40-45.
- 12) Kemmler, W., Dreyer, B. and Gattermig, B., 2022. Leistungsdiagnostik auf der Fridericiana Alexandrina Navis (F.A.N.) – eine Pilotstudie. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.482 - 498.
- 13) Land, A. and Dreyer, B., 2022. Die römischen Feldzüge in Germanien und das Klima. Eine Fallstudie für die Jahre 15 und 16 n. Chr. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.515-530.
- 14) Stamminger, M., Rückert, D., Gattermig, B. and Dreyer, B., 2022. Die F.A.N. virtuell besuchen und testen: Graphische Datenverarbeitung, Numerik und das Römerboot. In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.499-514.
- 15) Thünnesen, J., Gattermig, B., Günther, H.M., Wawrzyn, C. and Dreyer, B., 2022. Strömungsmechanische Tauglichkeitsanalyse der Fridericiana Alexandrina Navis (F.A.N.). In: B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.431-481.
- 16) Dreyer, B., 2024a. Zwei römische Boote im Test unter Riemen und Segel. *Bayerische Archäologie* 23. pp.52-55.
- 17) Dreyer, B., 2024b. Zwei römische Boote im Test unter Riemen und Segel. *Experimentelle Archäologie in Europa* 23. pp.41-54.

Example artillery

- 1) Dreyer, B., Clement, P., Hauenstein, A., 2022. Ein spätrepublikanischer, frühkaiserzeitlicher Scorpio. In B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit*. Darmstadt: WBG Academic. pp.170-188.
- 2) Dreyer, B., Hauenstein, A., Wilsch, W., 2023, In the Engine's Sights. Testing Reconstructed Roman ballistae. *Ancient Warfare* 16(6). pp.26-19.
- 3) Dreyer, B., Wilsch, W., 2024. Kicked by a donkey. The 'Impact' of the Roman Onager. *Ancient Warfare* 17(2). pp.8-11.
- 4) Dreyer, B., Hauenstein, A., Wilsch, W., 2024. Im Visier römischer Torsionsgeschütze: Artillerie der Antike. *Visier* 2024(2). pp.78-81.
- 5) Dreyer, B., Wilsch, W., 2025. Vom Skorpion gestochen – vom Wildesel getreten. *Römische Artillerie im Test*. *Archäologie in Deutschland* 2025(1). pp.46-49.
- 6) Dreyer, B., Fiedler, R. Ein Wildesel als Mauerbrecher, *Militärgeschichte*. *Zeitschrift für Historische Bildung* [in print].

Example transportation

- 1) Dreyer, B., Hilverda, A., Sponsel-Schaffner, Chr. and Werther, L., 2022. *Identifying Research Gaps for a Comprehensive Presentation of the Roman Danube Limes. 4.1 Germany: Navigability of Rivers in Roman Times and Roman Navigation on the River Altmühl. Some Remarks and Research Perspectives.* In: *Danube Transnational Programm, Living Danube Limes, 2022. Deliverable D. T1.2.1. Identification of Potential of Historical Roman Story Telling.* pp.37-48. Available at: https://dtp.interreg-danube.eu/uploads/media/approved_project_output/0001/46/dc2689c1ed48ad-10458c755823f451077f0a3877.pdf [Accessed 20 March 2026].
- 2) Dreyer, B., 2026. *Longitudinal Suspension and Bent Rims. Cross-Country Celtic Chariots.* *Ancient Warfare* 105. pp.54-57.
- 3) Dreyer, B., 2026. *Roman Cargo-Boats (Prahm).* *Ancient Warfare* 107 [in print].

Example ancient painting and intension

- 1) Carbon, C.-C., 2022. *Über die Wahrnehmung und Wirkung von Römerbooten: Zwischen Camouflage, Überraschung und Terror.* In B. Dreyer, ed., 2022. *Ein Römerboot auf dem Prüfstand – Bau und Test für Wissenschaft und Öffentlichkeit.* Darmstadt: WBG Academic. pp.333-349.
- 2) Dreyer, B. and Speck, M., 2021. *Farbe und Intention. Rekonstruktion antiker enkaustischer Bemalung auf der F.A.N. und DANUVINA ALACRIS.* *Skyllis* 21. pp. 62-71.
- 3) Carbon, C.-C., Dreyer, B. and Speck, M., 2026. *Using perception as a strategy: Camouflage, surprise, and the moment of shock related to perception.* *I-Perception* 17(1). pp.1-7. <https://doi.org/10.1177/20416695261425471>.
- 4) Sponsel-Schaffner, Chr., 2024. *Painting Techniques for Roman Shields.* *Per Aspera ad Astra.* *Ancient Warfare* 17(5). pp.48-49.