ROOTS • Booklet Series • 05 / 2025

ROOTS
Cluster of Excellence
Social, Environmental, and Cultural Connectivity in Past Societies

Old Habits Die Hard

Traces from the Past

Edited by:
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SIGILLVM ACADEMIAE HOLSATORVM CHILONIENSIS
PAX OPTIMA RERUM
A.D. 1665

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» Old Habits Die Hard: Traces from the Past «

Foreword

In the Cluster of Excellence 'ROOTS – Social, Environmental and Cultural Connectivity in Past Societies', scholars from diverse disciplines deal with the reconstruction of past societies. Connectivities of individuals and groups, of people and the environment, of events, processes and structures are investigated from an archaeological and historical perspective. Globalisation as a worldwide process, including the associated regional effects and reactions, is of primary importance. The underlying hypothesis – the more people are connected, the lower the potential for conflict – was the starting point.

Especially in times of crises and conflicts with disrupted communication networks and transportation routes, it is even more essential to know how people reacted in changing and challenging situations in the past: not only in the recent industrial and post-industrial world but also in distant times, which provide us, so to say, with a mirror of our behaviour and our possibilities. Thus, the question is raised how hunter-gatherers, first farmers, ancient societies or early modern urban communities created their worlds.

In this respect, we decided to create a booklet series which presents information in a generally understandable way in current times of massively increasing global conflicts. With the present brochure, ROOTS continues this series, which introduces the discussions and results of our research cluster to a broader public.

The ROOTS booklet *Old Habits Die Hard: Traces from the Past* explores positive and negative changes in habits – those in language, diet, interactions with other humans, and institutions. The range extends from direct, everyday changes to those of identity. Issues of waste disposal, personal hygiene, and illness are exemplarily presented to illustrate habits of individual behaviour, as well as those of coercion, with their sometimes serious consequences. Changing habits are concerned with technical aspects, such as driving, as well as changes in legal texts and mechanisms of oppression. The latter are illustrated using examples ranging from the integration or non-integration of foreigners to the fascist mass extermination of the excluded. Thus, habits reflect not only the opportunities but also the dangers of action. The fact that this booklet was primarily designed and realised by doctoral students is a great asset. For this, we extend our sincere thanks to this initiative.

The booklet series is also conceived to stimulate discourses and commentaries on future issues from a past perspective in other media. Only those who understand the past are able to sustainably shape the present and develop lasting future perspectives. Reconstructing human behaviour in other times – and specifically in terms of the human-environment relationship – can provide a deep understanding of the past and open up opportunities for the future.

Johannes Müller
Speaker of the Cluster of Excellence ROOTS

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Preface in the Name of the Young Academy

There are good and bad habits. Bad habits preserve what is not beneficial, good habits pass on and reproduce what is worth preserving. Better habits are behavioural patterns adopted out of responsibility and reason, steady improvements. But the best habits are certainly those that combine such constant improvements with daily pleasure.

What you are now holding in your hands is also an attempt to break old habits and establish new ones. This booklet – I hope – was created out of curiosity and the joy of asking questions. But it was also created as a project within the framework of the ROOTS Young Academy with the aim of training excellent doctoral students in independent and interdisciplinary research and publishing. This publishing project is part of the broader teaching concept of the Young Academy, which also includes regular international and interdisciplinary lectures and workshops as well as exchange programs and mandatory individual six-month evaluations.

At the outset of their work in ROOTS, the doctoral students were required to plan and produce a booklet together and finally submit it for critical review on time. The particular difficulty of this task was to produce a text that was acceptable to everyone in

arbitrarily composed groups of authors – a very practical exercise in interdisciplinarity, collegiality and mutual encouragement.

The process of finding a topic, discussing and writing, the distribution of roles – including responsible authorship and editorship – were organised by the doctoral students themselves and critically accompanied over two years by a series of courses at the ROOTS Young Academy. In particular, the ROOTS postdoctoral researchers – but also guests and external lecturers – helped with this, adapted to the current status of the project. There was much discussion on what habits and interdisciplinarity are, how to write in scientific English, how to address a wider public, how to use inclusive language, and what to consider with copyrights and scientific graphics. Finally, the texts created during the course of the project were subjected to a professional peer review.

Much of scientific practice is habit. The fact that this is constantly being questioned is a condition of scientific excellence. I hope that the support of the Young Academy has helped to make the doctoral students working on this booklet a little more enthusiastic about improving scientific and social habits in general. This would be a small but nice contribution to a successful life in science and beyond – and I wish the authors just that!

Tim Kerig
Speaker of the Young Academy

Henriette Brandt, Laurenz Hillmann, Darja Jonjić,
Anastasiia Kurgaeva, Sara Mura, Katharina Zerzeropulos

Introduction:

How Habits Influence Our Thinking and Actions

How did you start your day today? Did you actively think about what you did from waking up to where you are right now? Did you consciously choose all of these actions? If not, then you – like most people – have fallen victim to your habits. If you have ever tried to change them, you should know that old habits die hard!

Habits play a crucial role in shaping legal, environmental, and societal norms. The transition from informal norms to codified legal systems, the invention of the wheel, and the development of modern technologies, like Google Maps, have all transformed aspects of human life. Moreover, habitual practices, such as gift-giving, commemoration, and personal hygiene, are still deeply ingrained in everyday life, reflecting the evolving nature of human thought and the significance of cultural heritage. Habits have long been studied in different disciplines. One of the most influential scholars on the subject, within the humanities, is Pierre Bourdieu, who coined the

term *'habitus'* (see the infobox in this booklet: "From Habitus to Habits – Understanding the Threads of Cultural Behaviour").

Based on this concept, a *'habit'* is defined in this booklet as a recurrent, repetitive, or routinely performed action with minimal conscious effort (in response to the environment).

Over time, habits developed and have become deeply ingrained within daily routines, norms, and traditions to form the core of everyday life. While daily rituals incorporate habitual behaviour, they are often practiced with intention according to a prescribed order and carry symbolic or cultural significance. Tradition, in comparison, is a social practice, belief, or behaviour holding symbolic significance that is handed down through generations. Therefore, it does require conscious actions and thoughts. In contrast, a habit is an action that is automatically performed according to the same response pattern unless it is consciously avoided or suppressed.

In this booklet, habits are investigated from several angles and scientific disciplines. The aim is to trace the trajectories of past habits and how they still influence our society and us as individuals today. This highlights the importance of past-present connectivity – and "learning from the past". As a contribution from the Young Academy of the ROOTS Cluster of Excellence, the essays in this booklet draw from linguistics, archaeology, natural and historical sciences, as well as heritage studies.

As mentioned above, the habits observed here relate to different aspects of life: social relations, human-nature interactions, and individual behaviours. Thus, this booklet does not only trace bygone habits, but is aiming for a past-present connectivity. It provides new ideas on how learning from the past can lead to better behaviours and practices in the future. After reading the booklet, you will be able to better reflect on your personal everyday habits! ◆

↑ Figure 1. Typical North German: A harbour with a seagull, as seen here in Eckernförde (Photo: Jan Steffen, Kiel).

Darja Jonjić, Katharina Zerzeropulos, Sarah Bockmeyer

Moin, Buddel and Klönschnack – Language Habits of Northern Germany

Languages are dynamic entities, meaning that they are in a constant state of change as they reflect the evolving nature of human thought and the perception of reality. Nevertheless, many communities preserve their specific linguistic expressions as habitual elements in their everyday language usage. These unique language habits contribute to the identity of a particular population and reflect the habits and traditions of the community's cultural heritage.

The Northern German federal states of Schleswig-Holstein, Hamburg, Bremen, and Lower Saxony are characterised by specific linguistic features, setting them apart from other regions. However, the geographical boundaries of these linguistic features are fluid, meaning that the individual characteristics can also occur outside the specified federal states. Linguistic idiosyncrasies, such as the word '*Moin*' as a salutation, '*schnacken*' for chatting, and '*luschern*' for secretly observing, are firmly anchored in the daily discourse of people from Northern Germany. These idiosyncrasies are not unusual; rather, they provide insight into the regional culture (Fig. 1) and reflect historical influences on these dialects. In the following paragraphs, selected examples of Northern German language habits will be presented.

Anna-Theres Andersen and Darja Jonjić

Dialect vs. Accent

The term *'dialect'* refers to a regional variant of a language that has its own pronunciation, vocabulary, and grammar. '*Dit find ick knorke*' is a sentence with an example from the Berlin dialect. Other notable dialects in Germany include the Swabian and Saxon dialects.

An *'accent'*, in contrast, only refers to pronunciation, but not to grammar or vocabulary. The specific way of speaking with an accent typically differs from the pronunciation of other native speakers and reveals the speaker's origin. For instance, when people from Eastern Europe speak German, the rolling of the 'r' is a typical feature of their accent.

The most distinctive linguistic feature of North Germans is arguably the informal salutation with the word '*Moin*'. There are various hypotheses regarding the exact origin of this term. According to the *Duden* dictionary, the word '*Moin*' may derive from the East Frisian '*mōi*' or from Middle Low German '*moi(e)*', both meaning 'beautiful, pleasant, good'. Over time, after the subsequent '*Morgen*' (= 'morning') or '*Tag*' (= 'day') disappeared, the greeting with '*Moin*' came to be used at any time of the day. '*Moin*' is undoubtedly the most well-known and frequently used salutation in the region, often employed as an informal form of greeting instead of more formal terms. The use of the friendly '*Moin*' – instead of the more formal words '*Guten Tag*' (= 'Good day') or '*Hallo*' (= 'Hello') – is a local tradition and an expression of Northern German warmth and hospitality. It has become an essential part of Northern German communication and the speaking culture (Fig. 2).

In nearly every Northern German dialect, you will also find the word '*schnacken*', which means 'to chat' or simply 'to talk' or 'to converse', making it a common expression in everyday conversations. This lexical field also includes the Northern German word '*klönen*', also meaning 'to chat', as well as the compound word '*Klönschnack*' – a kind of casual, friendly conversation or chit-chat. The verb '*schnacken*' comes from *'snaken'* in (Middle) Low German, a West Germanic language group spoken in North Germany. It is also referred to as *Plattdeutsch*, which historically was the regional language in large parts of Northern Germany. Additionally, other typical Northern German expressions that stem from *Plattdeutsch* include the verb '*luschern*', an expression describing the act of secretly observing or eavesdropping in a charming and local manner, as well as the nouns '*Büx*' for trousers, '*Tüddelkram*' for small, often insignificant things or objects, and '*Kuddelmuddel*', describing a mess or chaos. The latter is a so-called reduplication or rhyme, where the Low German word '*koddeln*' (in English meaning 'to wash carelessly, not thoroughly') is repeated, with the first and second parts of the word ending in the same sounds. The use of these expressions in everyday North German speech reflects the historical influence of Low German in the region. The roots of such words stretch back into the past when *Plattdeutsch* was a widespread language in North Germany.

» The roots of such words stretch back into the past when *Plattdeutsch* was a widespread language in North Germany. «

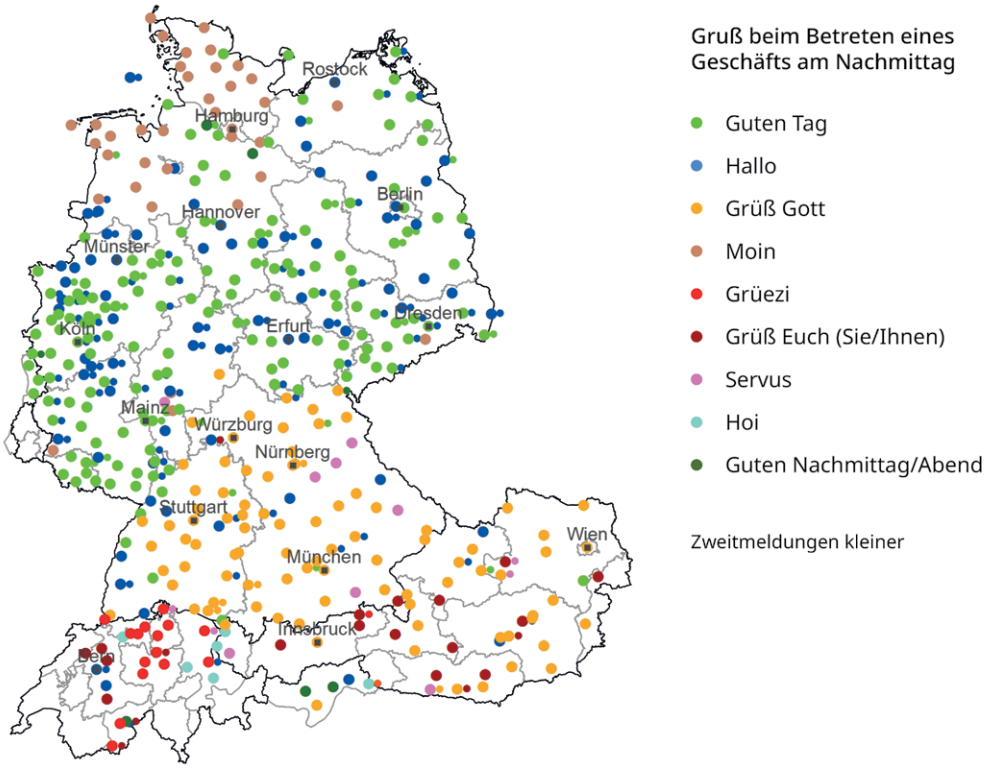
Anna-Theres Andersen and Darja Jonjić

Reduplication and Rhyme Duplication

Linguistics recognises so-called stylistic devices, which are to be distinguished from one another. One of these is 'reduplication'.

This is the repetition of a word or part of a word, such as in the word formation 'blah-blah-blah'. One type of reduplication is the 'rhyme duplication' mentioned above in the text.

For example, in '*Kuddelmuddel*', two consecutive word parts rhyme. This creates a sound effect, especially in everyday language, which conveys certain feelings. Thus, '*Kuddelmuddel*' creates a sense of disorder or confusion, which is also the meaning of the word.



↑ **Figure 2. Typical German words for salutations when entering a store in the afternoon (after: Elspaß and Möller, 2003ff. Atlas zur deutschen Alltagssprache [AdA]. Available at: https://www.atlas-alltagssprache.de/runde-2/f01/; edited).**

The next example demonstrates that a specific jargon or technical language can also pass into everyday language and become an integral part of regional expression. The term '*Buddel*', used in Northern Germany for a bottle, has its origins in the seafaring jargon of Low German and from Old French (<OFr *boteille*). Initially, the term was primarily used in coastal areas and port cities. Over time, it became ingrained in general usage, particularly in Northern Germany. The term '*Buddel*' originates from the Low German word '*Buddel*' or '*Büdel*', meaning 'bag' or 'pouch'. Originally used in the language of sailors, the noun referred to a bottle filled with beverages brought on board by seamen. This term may have been chosen due to the resemblance of the bottle to a bag in shape or packaging. Over time, the term '*Buddel*' has also extended to bottles in non-coastal environments and is used today in many Northern German dialects. However, this expression is only used colloquially, specifically within the context of non-coastal environments.

Anna-Theres Andersen and Darja Jonjić

Jargon vs. Technical Language

'Jargon' is a special language that is spoken by certain social groups. Jargon, also known as *'slang'*, serves to simplify communication within these social groups and is used by the groups to differentiate themselves from others. Therefore, jargon always has an identity-forming function. In a professional environment, this is referred to as technical jargon.

Experts in a field of expertise use specialised terms when communicating with each other – this is known as their *'technical language'*. Technical languages are found in all sciences, for example, when *'hypertension'* is used instead of high blood pressure in medicine, or *'cardiovascular training'* and *'cardio training'* are used instead of endurance training.

By the way: The specialised terms (Fig. 3) defined in the three infoboxes of this essay are also part of the technical language of linguistics!

↑ Figure 3. Word cloud with technical terms from linguistics (Image: Darja Jonjić).

» Such language habits are a sign that the roots of our cultural identity are deeply anchored in language. Our language embodies a sense of community and resilience, and through our linguistic habits we can build bridges to our past. «

While the mentioned words are part of the everyday language of North Germans, it should be clarified at this point that they are not used with the same frequency. While *Moin* is the most commonly used greeting phrase in the region and therefore frequently heard among the general population, terms like '*klönen*', '*schnacken*', or '*luschern*' are used less often. Additionally, the North German term '*Buddel*' is predominantly used by a specific population group and is only sporadically used by the general population. Its usage depends on the conversation partner or the content of the conversation, as well as whether it should be emphasised that the speakers know the meaning of '*Buddel*' and therefore come from Northern Germany. Although the article discusses words that have remained in use, it is important to note that some of the terms may not always have to be prevalent in everyday language.

Based on the examples provided, one realises that the language of North Germany is not just a means of communication, but a vibrant expression of history, tradition, and identity. Although High German (the standardised form of German) is the dominant language form today and although languages in general are constantly changing due to globalisation and digitalisation, many regional expressions have survived as linguistic habits in everyday North German speech. Such language habits are a sign that the roots of our cultural identity are deeply anchored in language. Our language embodies a sense of community and resilience, and through our linguistic habits we can build bridges to our past. The typical Northern German expressions, as evident in the examples provided, convey feelings of "cosiness", "warmth", and "friendliness" that are characteristic of Northern Germany. They clearly demonstrate that old language habits are not easily displaced from people's daily language use. ◆

Henriette Brandt, Sara Mura, Laurenz Hillmann

Should We Adopt the Dietary Habits of the Past? Eating Like Our Ancestors

Today, there are different diets suggested by specialists, dieticians, and food bloggers that one can embark on depending on what the goal is: Getting healthier, fitter, having lusher hair growth, building muscles, preventing cardiac diseases, etc. One popular modern diet is essentially not that modern at all: The Paleo diet – suggesting a prehistoric diet and eating habits of our ancestors.

↑ Figure 1. Modern cuisine is highly diverse and based on various factors, especially geography. This was also the case with prehistoric diets (Photos: Cecilie Chen, Oslo; edited).

A modern Paleo diet includes fruits, vegetables, lean meats, fish, eggs, nuts, and seeds. These are foods that people in the past could acquire by hunting and gathering. Several experts suggest that a Stone Age diet is what modern humans should consume. But what was actually on the Stone Age menu? The Stone Age diet may have been more diverse than we would think (Fig. 1).

Loren Cordain, a nutritionist at Colorado State University, studied the diets of living hunter-gatherers and concluded that 73% of these societies derive more than half of their calories from meat. This resulted in Cordain's (2012) book *The Paleo Diet: Lose Weight and Get Healthy by Eating the Foods You Were Designed to Eat*. Paleo-diet advocates, like Cordain, say that if we stick to the foods that our hunter-gatherer ancestors once ate, we can avoid the diseases of civilisation, such as heart disease, high blood pressure, diabetes, and even cancer. The current enthusiasm for Palaeolithic diets is based on the perception that anatomically modern humans evolved their food intake in the way that hunter-gatherers did during the Palaeolithic and that our genes, as modern humans, have not had enough time to adapt to farmed foods since then. However, the picture is a bit more complicated as humans are highly adaptive to situations and environments. The popular acceptance of a Paleo diet seems to be based on a few misconceptions of our past and our adaptability.

About two million years ago, eating meat was a crucial component in the evolution of our ancestors' larger brains. Instead of consuming a strictly plant-based diet, our direct ancestors, *Homo erectus*, consumed enough extra energy at each meal to fuel a larger brain. It is assumed that the human brain requires about 20% of the energy derived from food consumption when resting, while an ape's brain requires about 8%, implying that the human body is dependent on an energy-dense diet.

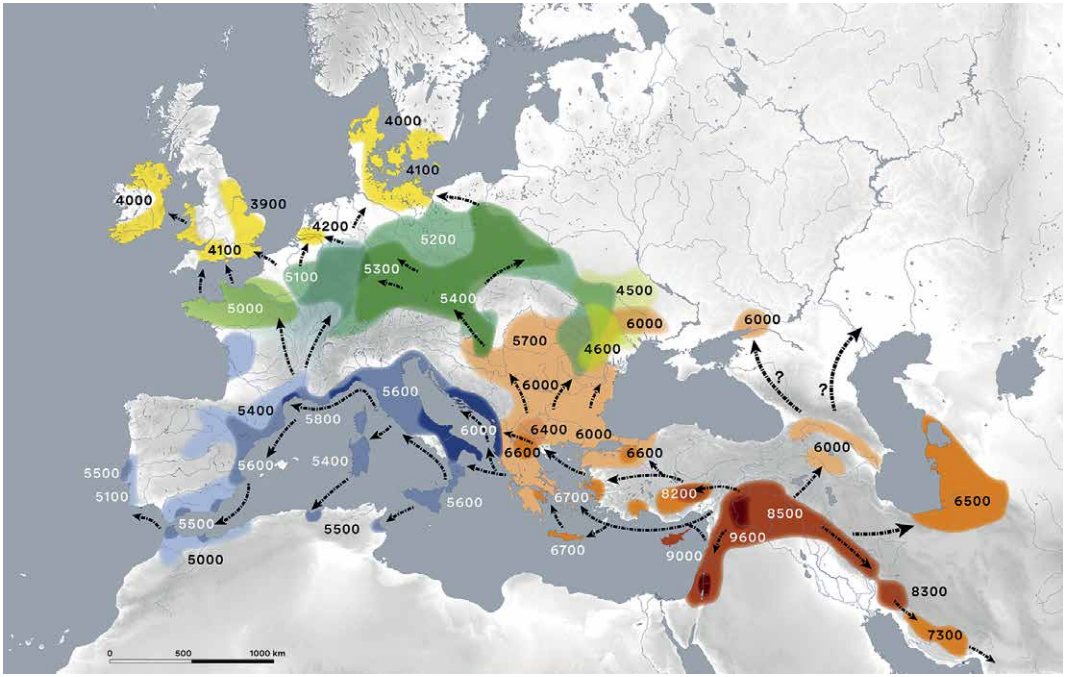
Raymond Dart discovered the first remains of *Australopithecus*, a genus of early hominins, and described them as the man-ape of South Africa. In 1953, Dart wrote the book: *The Predatory Transition from Ape to Man*, which has in later years been heavily, and perhaps justifiably, criticised. In his book (1953, 210), Dart claimed that our predecessors

» were carnivorous creatures, that seized living quarries by violence, battered them to death, tore apart their broken bodies, dismembered them limb from limb, slaking their ravenous thirst with the hot blood of victims and greedily devouring livid writhing flesh, [...] «

which sounds like it is taken from a horror movie and not a scientific paper. Later analyses of the material have shown that *Australopithecus* was actually rather prey than predator. In *Human Bodies of Evidence* (1987, 697), Martin and Harvey commented on Dart's interpretation of the fossil remains, saying

» This is just one particularly graphic over-enthusiastic interpretation of human fossil remains that was eventually rejected after sober scientific analysis. «

Regardless, the diet of primates took a significant turn from plant-based to meat-heavy sustenance, ultimately affecting the evolution of the species.



↑ Figure 2. The spread of farming from Southwest Asia to Europe from 9600-4000 BCE (Map: D. Gronenborn, B. Horejs, M. Börner, M. Ober [LEIZA/ÖAI] 2023.1. Available at: https://doi.org/10.5281/zenodo.10047818; CC BY 4.0; https://creativecommons.org/licenses/by/4.0/; edited).

Thousands of years ago, the human diet took another key turn when agriculture became a major part of the subsistence strategy. The cultivation of grains, such as sorghum, barley, wheat, maize, and rice, provided a more consistent food supply. Even though the farmers also experienced food insecurities, a population surge ultimately occurred, with farmers eventually outnumbering foragers. The shift to agriculture has been debated if it represented a clear health advancement or if a healthier diet and stronger bodies were traded for food security.

The shift from hunting and gathering to farming brought about significant changes in human societies (Fig. 2). This transformative era, known as the Neolithisation wave, witnessed the adoption of sedentary life, farming practices, and animal husbandry. This new way of life originated in Southwest Asia between 10,000 and 8000 BCE and spread into Europe between 6500 and 4000 BCE. Neolithic settlers, likely originating from Anatolia, reached the Aegean shores around 6500 BCE. Subsequent settlement waves expanded through the Balkans, the Carpathian Basin, and Central Europe, introducing new animal and plant management techniques. There are differing views concerning the Neolithisation process, with debates on whether it was a foreign-induced immigration or a local adoption of foreign practices by European hunter-gatherers. The introduction of species, such as sheep, goats, and specific cereals and pulses from the Near East, marked a key aspect of this transformation and changed the diets of humans forever. The diet of the early farmers

has long been studied through archaeozoology and archaeobotany. However, more recent techniques, such as palaeogenetics, stable isotope analysis, and geometric morphometrics, have further expanded our knowledge about the early farmers and their diets (see the infobox on "Natural Science Methods in Archaeology – Archaeometry" on the next page of this booklet).

Today, indigenous groups around the world are prevented from following their traditional dietary habits due to deforestation and industry. When the main source of food is the forest, the river, or your own garden, today's modern industry and encroachment on habitats cause people to change their traditional resource procurement methods. Indigenous groups are forced to abandon their traditional diet and their active lifestyle of hunting and gathering and take up trading, which has resulted in health deterioration amongst the indigenous population. Could this indicate that the food bloggers and the nutritionists preaching the Paleo diet are right? Could eating like our prehistoric ancestors make us healthier?

The exploration of diets throughout human history reveals a complex account marked by significant shifts in subsistence strategies. The Paleo diet is rooted in the practices of our hunter-gatherer ancestors. In the Neolithic period, marked by the advent of agriculture, humans adapted their diets in response to environmental and societal changes. In the continuing debate surrounding modern-day nutrition, it is crucial to consider the broader context of human adaptation, societal changes, and the impact of globalisation on traditional practices. While there may not be a "one-size-fits-all" solution, understanding the evolutionary journey of human diets can influence contemporary discussions about health, nutrition, and the sustainability of dietary choices. ◆

» Indigenous groups are forced to abandon their traditional diet and active lifestyle of hunting and gathering and take up trading, which has resulted in health deterioration amongst the indigenous population. Could this indicate that the food bloggers and the nutritionists preaching the Paleo diet are right? Could eating like our prehistoric ancestors make us healthier? «

Henriette Brandt, Anastasiia Kurgaeva, Fiona Walker-Friedrichs

Natural Science Methods in Archaeology – Archaeometry

Archaeometry is an umbrella term used since the 1950s to group natural science methods in archaeology. These methods have become increasingly prominent and have often been originally developed in other disciplines such as biology, chemistry, physics and earth sciences. The recent and rapidly developing methods of archaeometry have furthered the establishment of numerous subdisciplines, which are often closely related and sometimes overlapping. For archaeological investigations, it is crucial to combine numerous methods to answer the research questions. In the following, a brief overview of commonly used disciplines and methods is provided, enabling a view into research conducted within archaeological sciences.

Zooarchaeology (also Archaeozoology) is the study of animal remains from archaeological contexts. Zooarchaeological analysis usually uses modern bones from animals as comparative material to identify species, the bones that you are looking at, and other factors such as bone diseases.

Archaeobotany is the study of ancient plant remains. Archaeobotanical studies identify and analyse seeds, fruits, pollen and wood. These are preserved in archaeological contexts, for example, through charring, dessication or waterlogging. Moreover, with the help of archaeobotany, plant use and past environments can be reconstructed.

Archaeogenetics is the study of ancient DNA (aDNA) from archaeological organic material or soil. aDNA is used, for example, to show population mixture, domestication traits and/or genetic changes. In soil DNA (sDNA), the absence or presence of species is the main focus. Such analyses are very dependent on a good genetic reference database.

Stable isotope analyses are used in archaeology to determine diets, investigate mobility, trace object origin, and to reconstruct the environment. Isotopes of elements have different weights due to a different number of neutrons. For this method, we use isotopes that do not decay over time. Therefore, the abundance of isotopes stays the same within different material over time. Depending on the research question, materials, such as bones, teeth, plant seeds, and/or sediments, can be used for stable isotope analyses.

Stratigraphy is a branch of geology that deals with the sequence of geological layers and the processes of their formation on both local and regional scales. The analysis of palaeosols (soils of the past), and of sediments, *i.e.* palaeopedology, facilitates the reconstruction of past environ-

ments, including environmental conditions, the climate or human influence. Both disciplines use a comparable range of measurement methods, for example, they analyse magnetic parameters, grain sizes, element concentrations, and specific molecular compositions. In addition, visual observations of soil structure and compositions at the micro level are made, which is called micromorphology.

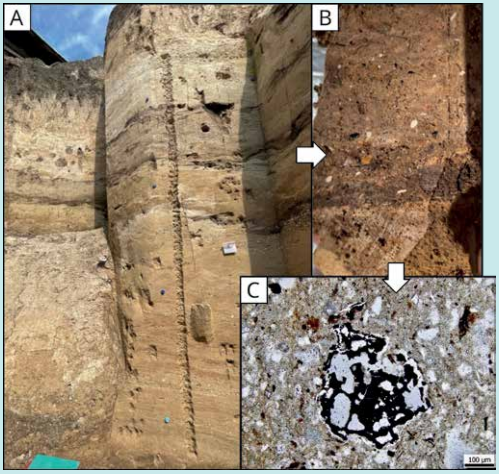
Geophysical methods are a group of non-destructive methods (*e.g.* geomagnetics, ground penetrating radar) used to analyse the spatial structure of an archaeological site. These methods use different physical parameters which can detect structures lying under the surface.

There are also specific methods that are used for absolute dating:

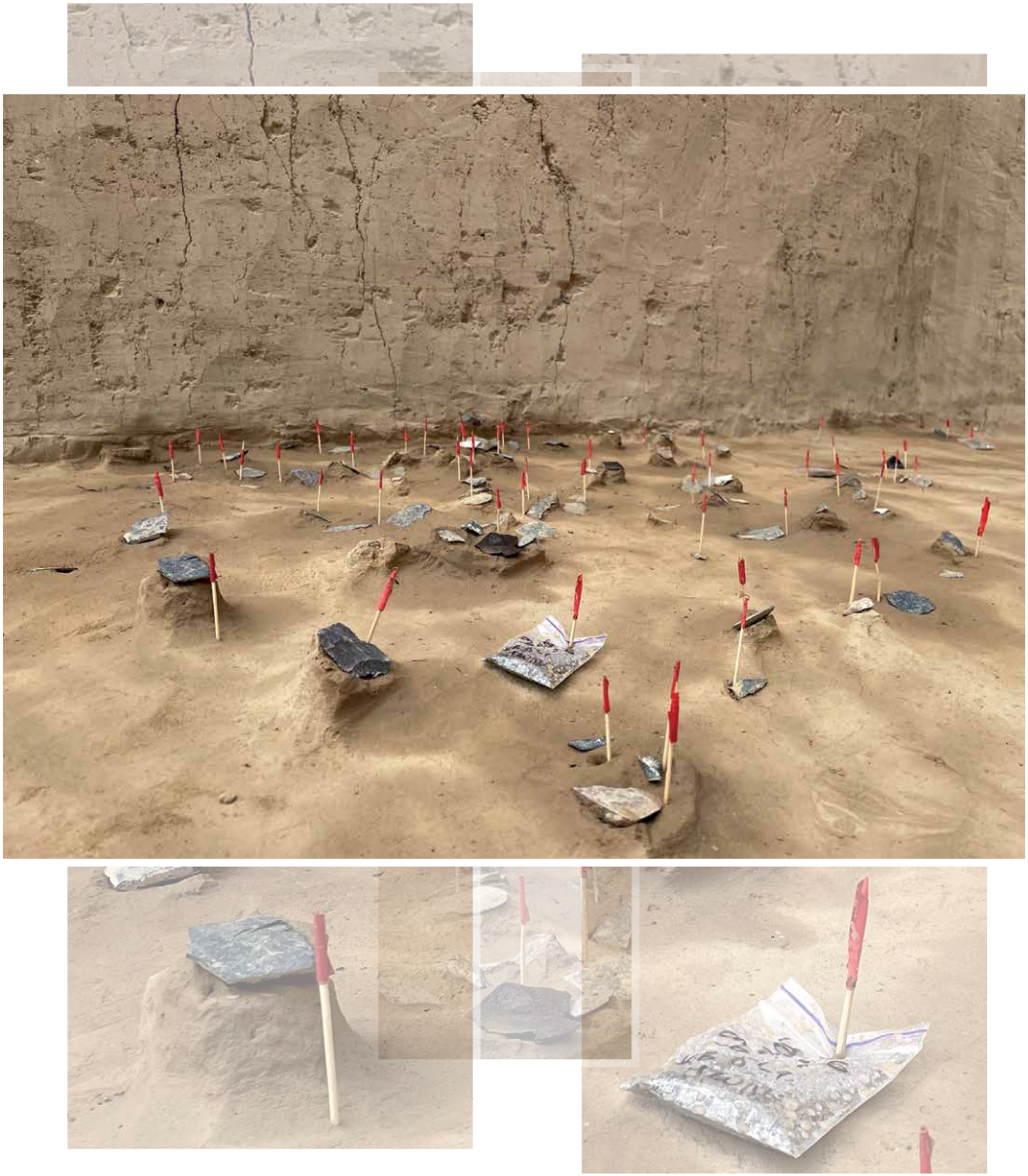
Radiocarbon dating uses radioactive isotopes, such as ^{14}C (Carbon 14), that decay over time. This makes radiocarbon dating a very important tool in archaeology to determine the age of organic material such as bones, charcoal, soil, and other organic matter.

Dendrochronology dating is the determination of the absolute age of wood through the sequence of tree ring widths. It can be used together with radiocarbon dating to improve dating accuracy. Due to the varying factors that impact the growth of trees, the chronologies are each specific to a region and a tree species.

Luminescence dating is a form of geochronology. It is used to identify when a mineral grain, such as quartz, was last exposed to sunlight or sufficient heat, for example, during the firing of ceramics. The age is calculated by measuring the release of photons from the mineral. ◆



← Figure 1. From the macro- to the meso- and to the micro-level: sedimentary and palaeopedological analysis on different levels of observation at the Upper Palaeolithic site Kostenki 17 on the Eastern European Plain (Russia, Voronezh Oblast).
A) The loess palaeosol profile, in which the main stratigraphic units are distinguished.
B) The description of the main features and anthropogenic inclusions of the different sedimentary and palaeo-soil units on the meso-level.
C) Natural and anthropogenic genesis of the material, including sedimentary and pedological processes, are determined as a result of observation under the microscope (Photos: Anastasiia Kurgaeva).



↑ Figure 1. The surface of the cultural layer at the Upper Palaeolithic site Uzynagash 1, Southeast Kazakhstan. Lithic items were left on the occupation surface by inhabitants as waste without taking care of its disposal (Photo: Anastasiia Kurgaeva).

Anastasiia Kurgaeva, Florian Schwake, Fiona Walker-Friedrichs

Out of Sight, Out of Mind, or Not Quite? Habits of Waste Disposal

Humans are inextricably linked to nature and the environment and are mutually interdependent with both: Not only does human activity have an impact on ecosystems but humans are also strongly dependent on the environment and its changes. Every day, humans use natural resources and produce waste. In most cases, the remains are deposited back into the ecosystem. In the following, therefore, the disposal of waste – and specifically household waste – will be considered within the framework of the investigations into human habits that are undertaken here.

Waste disposal may be subject to certain rules, in Germany, for example, waste separation regulations. Depending on the person or household, this is a conscious or unconscious, daily repeated action. The disposal of and, if necessary, recycling of waste is an issue that people around the word have to deal with today. However, this has been the case in the past and will continue to be the case in the future. It is obvious that the way waste was and is treated varies. Nevertheless, it is worthwhile to take a closer look at this habit and to examine the development of its characteristics (*i.e.* waste material, geographical distribution and concentration, its [negative] environmental impact, *etc.*) using examples from three periods (the Upper Palaeolithic, the Industrial Revolution and modern times). The choice of case studies and time periods is subjective and depends mainly on the availability of data and its relevance for the discussion.

The nomadic lifestyle of the Palaeolithic population determined what type of waste material they produced: stone tools and the results of their production (variable lithic flakes, chips, lost or left stone tools, *etc.*), animal bones, and organic remains such as waste from food production, tool making, and the organisation of the living space (*e.g.* wooden posts for buildings, and hearths). This waste material can be considered "natural" as the Palaeolithic popula-

In the Palaeolithic (from roughly 2.5 million years ago to 10,000 BCE), human waste consisted mainly of discarded lithic and bone artefacts, as well as organic remains. Such mineral, organic and organo-mineral materials can be found in ecosystems with or without human presence. As a result of Palaeolithic human activity, waste is distributed locally, i.e., it is found within settlement sites, or in the case of site abandonment, it is relocated by natural processes along the topography of the terrain.

tion did not yet have the technological knowledge on how to produce materials that cannot be found in nature. Thus, their waste is mainly represented by physically altered materials. Once a site with accumulated waste was abandoned, it became part of the environment and the effects on the ecosystem were negligible. The organic remains degraded naturally and were subsequently fully incorporated into soil organic matter. Lithics and not completely dissolved bones stay buried under more recent sediments and can be uncovered and examined by archaeologists today (Fig. 1).

Thus, local waste depositions of Palaeolithic people have been identified. Most of the time, the waste can be found within a settlement or in some cases eroded down along a slope, where it accumulated within the same ecosystem. At sites inhabited for short periods, the waste from animal butchery and lithic tool production remained on the surface around the area where these activities occurred. At sites of longer occupation during the Upper Palaeolithic (from roughly 50,000 to 10,000 BCE), characterised by higher amounts of waste, pits were dug for waste disposal or waste accumulated at the periphery of settlements. This is possibly one of the most ancient methods of waste management recorded by archaeologists.

With time, humans advanced their knowledge of how to alter the state of natural resources to produce longer-lasting items, for example, pottery, clay bricks, metal alloys, *etc.* The components of waste changed but not very significantly in terms of natural decomposition processes: These items were still degradable within reasonable time frames (from several months to several years) or did not have a strong negative effect on ecosystems (*e.g.* leather clothes and pottery). However, as the number of people living in close proximity rose, the amount of waste within some ecosystems also increased. This led to a higher concentration of waste (*i.e.* the amount of waste produced per unit area). Waste could no longer degrade naturally on site and was eventually disposed of in the environment, mainly in water bodies such as lakes and rivers.

The appearance of the exchange of goods, the intensification of food production, and later manufacturing are associated with denser population settlement and urbanisation in general. The first urban centres appeared as early as 4000 BCE. Over time, urbanisation accelerated in various cultures around the world and evolved rapidly during the pre-industrial period and the Industrial Revolution. Increasing population density led to a higher concentration of domestic waste, which overwhelmed the natural capacity of ecosystems to decompose and dilute the material deposited in it. This caused pollution. In some cases, pollution spread from local to regional areas along severely affected waterways.

As a result, the natural capacity of water bodies to decompose, dilute, or store the disposed substances in some harmless form was exceeded, thus, the water bodies became polluted. There is evidence of pollution even in prehistory – before the invention of writing – for example, due to the burning of waste in closed caves by the Palaeolithic population. The first global pollution, a result of metal production by the ancient Greeks, Romans and Chinese, can be detected in Greenland ice cores. However, environmental pollution as a result of domestic waste disposal only became a serious problem much later due to the increase in population density.

Since then, the concentration and amount of domestic waste input into water systems increased steadily. Since water bodies are strongly connected to each other, local river pollution without preventive measures could become a regional problem. Unfortunately, there is a limited number of palaeoenvironmental studies on water pollution due to domestic waste disposal. Most of them focus on the eutrophication problem. Eutrophication processes appear because of an excessive flow of nutrients into water systems, mainly lakes, which then leads to the explosive growth of water microorganisms

↑ Figure 2. "*The silent highwayman*: Death rows on the Thames, claiming the lives of victims who have not paid to have the river cleaned up, during the Great Stink" (Source: Punch Magazine, vol. 35, 137; 10 July 1858; Wikimedia Commons; Available at: https://en.m.wikipedia.org/wiki/File:The_silent_highwayman.jpg; in public domain; edited).

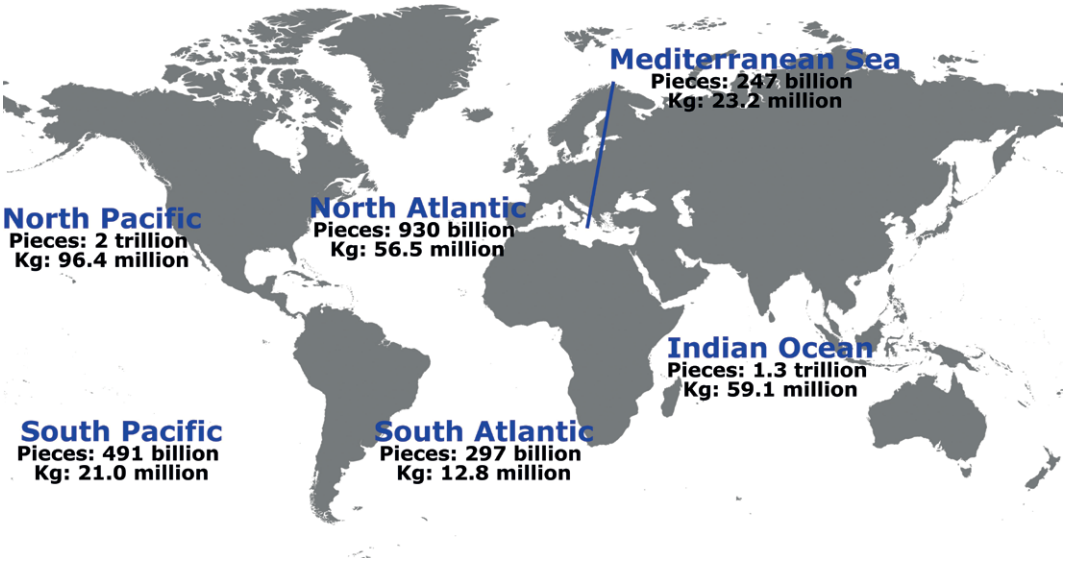
and, thus, oxygen depletion, which causes the death of other water organisms. However, historical documents can also be helpful to trace the negative impact of domestic waste. For example, in July and August 1858, London experienced the "Great Stink", which was a consequence of the intense pollution of the River Thames (Fig. 2). Due to the preceding population growth (from just under 1 to 3 million during first half of 19th century) and the introduction of flushing toilets, the existing sewer system was overwhelmed. The water, which was also contaminated by wastewater from nearby industrial plants, was

In modern times, global environmental pollution has become a truly international issue. One of the most common materials used today is plastic, which degrades extremely slow but is used everywhere because of its properties and low production costs. From its origins in human settlements, through river systems and global ocean currents, plastic residues are traceable worldwide. Permanent pollution is therefore unavoidable.

discharged directly into the River Thames, whereupon such a foul smell developed in summer temperatures that a new sewage system had to be built. Therefore, with this example we see that maintaining the regular habit of domestic waste disposal led to a regional environmental catastrophe because of a high population density and the absence of appropriate waste management.

One of the markers of the onset of the Anthropocene is considered to be the ubiquitous plastic pollution which started approximately in the 1950s. Since the 1970s, plastic has been reported to be a pollutant and already in the late 1990s the so-called "North Pacific Garbage Patch" – a collection of trash that extends over 20 million km^2 – was discovered. According to the WWF report on plastic pollution in marine ecosystems published in 2022, about 79% of produced plastic ends up in landfills or in nature. Once plastic enters a water body, it moves along the connected river systems and ends up in the ocean. Thus, land-based plastic waste accounts for 80% of marine plastic debris. Due to ocean currents, plastic waste accumulates in large, circular and rotating garbage patches (*'hotspots'*). Further accumulations have been found near the largest emission sources, such as the mouths of the longest polluted rivers, and in marine ecosystems such as coral reefs, mangrove forests and deep-sea canyons. Plastic damages marine ecosystems physically and chemically. Another important aspect of this problem is micro- and nanoplastics, which are found in the food chain as well as the human body, which can lead to disease. Most plastic pollution is the result of domestic waste disposal.

The major property of plastic is its resistance to natural degradation processes and its durability, which contribute to its high demand and worldwide distribution. However, the property of plastic, which makes it so useful for humans, is also the property that makes it harmful for the environment. Available technology allows for the manufacturing of materials, which do not exist in nature, but that are



↑ Figure 3. Plastic pollution in the world's oceans. Estimates of plastic floating in the world's oceans (total particle count and weight) (Map: Anastasiia Kurgaeva, after Eriksen *et al.* 2014, 8 tab. 1; edited).

released into the environment by human disposal habits. Despite a growing awareness of the ecological issue, it is still an ongoing challenge (Fig. 3).

As can be seen from the three examples of waste disposal at different stages of human life on earth, advancements in technology, population growth, the increasing complexity of human societies, and their broader spatial dispersion across the globe, alongside rising population density in certain regions and cities, have led to changes in waste disposal habits over time. The volume of waste and the area of its distribution grow while, at the same time, waste became more resistant to degradation. Thus, its negative impact on ecosystems has intensified. Thus, waste management has evolved from being a problem for small groups to a societal issue and, then, to a global problem that also has to be addressed at the international level. The properties, volume, and concentration of waste and human habits of disposal (individual actions, municipal waste management systems) influence the future of waste in the ecosystem: Can the disposed domestic waste be degraded or stored without negative impacts on the environment? Or will it cause a long-term alteration of the whole ecosystem and negatively affect all the connected natural processes and, as a result, human beings? These complex topics of present-day waste management and the negative impact of waste on the environment are acute and extremely variable across the globe.

The habit of waste disposal has not only changed due to technological advancement, but we can also observe its cyclical development. In every considered case study, we saw the need to make changes to existing practices when the anthropogenic effect on the environment becomes too large to unconsciously continue the repetition of the same actions. For example, in the Palaeolithic, disposal pits were dug, in the industrial era of the Great Stink, a new canalisation project was initiated, and today we currenty witness the rise of green initiatives and the development of recycling technologies, which hope to constrain the ever-growing problem of waste disposal. Thus, as any habit related to direct interaction with nature, human impact on an ecosystem and its consequences constitute the cycle of a habit development. At the beginning of a cycle, humans unconsciously repeat a habit, while the environmental feedback goes unnoticed because the natural processes still cope well with the amount and concentration of the incoming waste. Then, only when the consequences become negative and noticeable, do the respective societies consciously deal with the problem. They could abandon the affected ecosystem, tolerate the problem, or invent new methods of waste management, such as new disposal sites (*e.g.* disposal pits in the Palaeolithic), distribution systems (new sewage systems), waste recycling (sometimes to produce new items) and the limitation of waste production by introducing more sustainable technologies.

Finally, there is also good news regarding the habit of waste disposal. The environmental issues, which appeared because of human waste disposal to nature, initiated the study of ecosystems and how different ecosystems are connected on a global scale. Scientific research into the relationships between humans and the environment has already saved us from natural disasters – and could help reduce current and future environmental impacts. Given the ecological problems resulting from waste disposal, humans no longer treat waste disposal as a habit. Instead, we tend to consciously change actions to diminish our environmental impact. Thus, an unconscious habit can become a conscious action that leads to positive change. Unfortunately, this happens too rarely and it still is not the case for most of the global population. Fortunately, there is a growing trend: Individuals are taking the initiative to address environmental issues, starting with themselves. This includes conscientious waste disposal practices and efforts to minimise waste production, often supported by changes in ecological policies, which are becoming increasingly prevalent in our society. This is an undoubtedly positive trend, even though there is still a long way to go. ◆

Laurenz Hillmann, Anna-Theres Andersen, Florian Schwake

Scrubbing Through Time: Ancient Body Care Habits Revealed

Taking care of one's own body is a fundamental part of our everyday life. It can be part of your own identity, a practise of a religious belief system, or just a necessary chore, but every one of us practises personal hygiene in one way or another. A habit of personal care, often referred to as hygiene practice, encompasses learned behaviour patterns that are performed regularly. These practices have become almost automatic through frequent repetition. In the following, we will examine some of these hygiene and personal care habits in more detail.

Although the act of ritual/religious cleaning and the regular care of the body are similar, we have to distinguish between these two sides of hygiene. They are closely intertwined and have influenced each other, especially in prehistoric and historic times, before the discovery of bacteria and other microorganisms. Today, the notion is common that we have the most thorough body care habits and technology in human history. But when we think of the past and people from medieval or even prehistoric times, we often picture them as dirty, wretched and dishevelled beings. This idea of the "dirty past" comes from the dawn of the Industrial Revolution (the 2nd half of the 18th century CE), when society changed, and people wanted to distance themselves from the past. However, this is far from the truth, as archaeological and historical finds can prove. Although people at that time had their own routines, and they might have looked a lot different from humans in modern times, astonishing similarities may be observed across time and space. For example, Roman personal hygiene practices significantly influenced those of later European societies, but they were not the only influential traditions. This is why it is worthwhile to shift our focus to other cultural settings. In the following, we will delve into the habits of ancient bathing practices in medieval Europe and far to the east in the Indus Valley and Japan (Fig. 1). Likewise, we will look at how Mayans cared for their teeth and how Vikings kept themselves presentable with their personal belongings and practices.

← **Figure 1. Women's bathhouse and laundry (*'sento'*). Painting by K. Shigemasa, early 19th century. Art Institute Chicago, ref. no. 1971.455 (Source: Art Institute Chicago. Available at: https://www.artic.edu/artworks/36550/women-s-bathhouse-and-laundry; CC0 public domain; edited).**

Ancient bathing practices

The bathing practices of the Indus Valley Civilisation from 2800-1800 BCE, which we find today in Pakistan and Northwest India, stand as a testament to the sophistication of this ancient society's urban planning and social customs. Excavated archaeological sites, particularly Mohenjo-Daro (Larkana, Pakistan), provide crucial insights into the communal bathing habits of the people. At the heart of the Indus Valley's advanced urban centres were expansive bathing structures, such as the so-called "Great Bath", which was of communal and ritualistic significance. The sheer scale of the Great Bath, complete with steps, ledges, and a carefully designed drainage system, attests to the importance placed on cleanliness and communal bathing. The bathing practices in the ancient Indus Valley were not merely utilitarian but imbued with cultural and spiritual dimensions. As we delve into the remnants of this ancient civilisation, we do not only uncover a blueprint for urban living but also catch a glimpse into the cultural significance attached to the act of bathing in the ancient Indus Valley at that time.

The ancient Japanese traditions associated with the *'sento'* and *'onsen'* culture reveal a profound connection between communal bathing, spirituality, and social life. *'Sento'*, public bathhouses, and *'onsen'*, natural hot springs, have played vital roles in Japanese society for centuries, reflecting a unique blend of practicality and cultural significance. Sento, dating back to the 6th century CE, were initially introduced for public health and hygiene. Over time, they evolved into social hubs, fostering community bonds. These bathhouses feature various pools, offering diverse water temperatures and baths. The act of communal bathing in sento symbolises the Japanese dedication to cleanliness and shared well-being, but the practice was commonly separated according to gender (Fig. 1). '*Onsen*' bathing holds a special place in Japanese culture. Located in volcanic regions, these geothermally heated baths are not only prized for their therapeutic properties but are also regarded as spiritual spaces until today. *Onsen* bathing is seen as a meditative practice, connecting individuals with nature and promoting a sense of tranquillity. The rituals associated with bathing underscore the importance of cleanliness, relaxation, and communal harmony. Today, these traditions persist, providing a glimpse into the timeless significance of water, warmth, and shared experiences in the rich tapestry of Japanese cultural heritage.

In medieval Europe, monastic life was not only greatly characterised by prayer and contemplation but also by a commitment to physical and spiritual cleanliness, exemplified by the presence of monastic baths. Monastic bathhouses served as integral components of medieval monasteries, combining practical hygiene with symbolic rituals. These baths, often located within the monastery complex, were designed for communal use by the resident monks. The medieval monastic bathhouses featured simple yet effective architecture, reflecting the monks' dedication to simplicity and humility. The baths typically consisted of cold and hot water pools, allowing the monks to practice a form of hydrotherapy for both physical well-being and spiritual purification. Beyond the practical aspects of personal cleanliness, the act of communal bathing in medieval monastic baths held symbolic significance. Monks viewed bathing not only as a means of purifying the body but also as a metaphor for spiritual cleansing and renewal. The communal nature of these baths fostered a sense of unity among the monastic community, reinforcing the ideals of brotherhood and shared devotion (Fig. 2). In essence, medieval European monastic baths were more than mere facilities for personal hygiene: They could be sacred spaces where monks engaged in practices that addressed both the physical and spiritual dimensions of their lives. These baths stand as tangible reminders of the interconnectedness of bodily care and spiritual devotion within the medieval monastic tradition.

Personal grooming artefacts

Mayan dentistry, rooted in ancient Mesoamerican civilisation, offers a fascinating glimpse into the sophisticated medical practices of this past culture. Archaeological discoveries reveal a remarkable un-

↑ Figure 2. Depiction of a monk washing three poor men's feet. Illustration from the so-called Harley Psalter, Canterbury, 11th century. British Library, Harley MS 603, f 66v (Source: British Library, Medieval Manuscripts Blog. Available at: https://blogs.bl.uk/digitisedmanuscripts/2018/03/bathtime-for-monks.html; CC BY 4.0; https://creativecommons.org/licenses/by/4.0/; edited).

derstanding of dental care. Evidence suggests that the Maya conducted various dental procedures, including drilling and tooth filing, which likely addressed issues like cavities and dental decay. Their dentists employed an array of tools for dental procedures, such as drills crafted from obsidian, a sharp volcanic glass. These tools showcase remarkable craftsmanship and technological prowess. The Mayan approach to oral health extended beyond mere medical interventions; an understanding of dental care is evident in the symbolic use of jade dental inlays. Jade, a precious stone, adorned the teeth not only for aesthetic purposes but also held cultural and ritualistic significance, symbolising status and spirituality. Moreover, medicinal plants were integrated into their dental practices, utilising natural remedies for pain relief and infection control. This combination of technological innovation, cultural symbolism, and natural remedies paints a comprehensive picture of the Mayan commitment to oral health.

The prevailing image of Vikings as relentless warriors, who plundered and scorched Europe's coastal towns, is increasingly challenged by modern archaeological discoveries. Traditionally, histories of these Norsemen, written by the cultures they defeated, depicted them solely as barbaric invaders, often omitting the complexities of their society. This narrative was largely influenced by the one-sided accounts preserved in Christian monasteries, which did not fully encapsulate the Viking ethos. Recent archaeological work, for example, the notable Birka burial site in Sweden, paints a different picture. Excavations have uncovered a wealth of artefacts

← Figure 3. Assorted tools for men's personal hygiene, including a comb, a razor and an ear spoon. Found in Hågerup, Brahe-Trolleborg, Dänemark. National Museum of Denmark in Copenhagen; inv. no. C23258, DNF 35/32, DNF 36/32 (Source: National Museum of Denmark; photo: John Lee. Available at: https://samlinger.natmus.dk/do/asset/1779; CC BY-SA 4.0; https://creativecommons.org/licenses/by-sa/4.0/; edited).

originating from the 8th to the 10th century CE that demonstrate the Vikings' commitment to personal hygiene. Among these are tweezers, ear spoons, and combs – tools integral to their grooming routines (Fig. 3). These findings contradict the stereotypical image of the Vikings as merely fierce warriors. Instead, they reveal a society that placed a significant value on both physical prowess and the subtleties of personal care. This nuanced understanding of Viking life highlights their sophistication, challenging long-held stereotypes and broadening our appreciation of their cultural practices.

Modern practises and their relations

In conclusion, the exploration of Indian baths, Japanese *'onsen/sento'* bathing, monastic baths, Mayan dentistry practices, and Viking grooming utensils not only unveils the details of ancient grooming customs but also establishes both connections and distinctions among these practices compared to our modern body care habits. For example, the Mayan advanced approach to dental care, which included the use of obsidian tools and jade inlays, underscores a sophisticated understanding of oral health that mirrors today's emphasis on dental hygiene, al-

beit with different materials and methods. Similarly, the Viking use of tweezers and ear spoons indicates a culture that prioritised practical and aesthetic aspects of personal grooming.

However, while there are striking similarities in the underlying motives of cleanliness and self-care across cultures, the social and architectural contexts in which these practices were embedded varied significantly. Bathing practices, such as those in Indian and Japanese cultures, often occurred in communal settings, which played a crucial social role and were strategically integrated into urban spaces. These communal spaces were architecturally distinct and tailored to fit the cultural and environmental ethos of their societies. In contrast, monastic baths were more secluded, reflecting their spiritual and ritualistic importance.

Thus, while the fundamental pursuit of maintaining a well-groomed appearance transcends time, the ways in which different cultures approached these practices – through varied uses of space, social contexts, and crafted objects specially manufactured for this purpose – highlight the diverse paths through which personal care has been realised throughout history. This nuanced understanding of ancient and modern hygiene practices serves as a reminder that the desire for cleanliness and self-care remains a timeless and universally shared aspect of the human experience. ◆

» The Mayan advanced approach to dental care, which included the use of obsidian tools and jade inlays, underscores a sophisticated understanding of oral health that mirrors today's emphasis on dental hygiene, albeit with different materials and methods. «

Sarah Bockmeyer, Gianluca Ricci, Anna-Theres Andersen

They See Me Rolling – Habits of Driving Around in Prehistoric Times

Do you take the train, your car, or a bike to work? Do you consciously think about the wheels rolling? For the longest time in the history of humankind, we did not need to think about how to get from one point to another because we walked everywhere. Humanity conquered almost the entire world by foot, from Africa to Europe, Asia, Australia and even the Americas. That is, until about 3500 BCE in the Central European Neolithic period, when the wheel was invented – potentially in several areas simultaneously – which changed transportation and movement across the landscape over the next few thousand years.

↑ Figure 1. One of the oldest images of a wheel and a wagon in the megalithic tomb of Lohne-Züschen near Fritzlar in Hessia (Photo: Sarah Bockmeyer).

The first wheels were disc-wheels, which were cut out of a whole tree by carving a disc from the stem against the grain. Cutting a tree disc vertically would have led to the tree rings breaking off and the wheel getting smaller over time. There were also wheels that consisted of two to three segments that could be more easily replaced when one of them broke. Nevertheless, human beings still walked almost everywhere because of forestation in Europe and Asia that made it impossible to use carts. However, within a few thousand years, both paved roads and specialised vehicles, such as war chariots, were developed in Central Europe.

In the beginning of wheeled transportation (Fig. 1), wagons or carts were most likely only used to bring in the harvest from nearby fields, as farming had been established around 6000 BCE, approximately 2500 years prior to the invention of the wheel. There seems to be a clear distinction between a four-wheeled wagon tradition coming from the Eurasian Steppe and the two-wheeled cart tradition in the Southern German area and potentially the Carpathian Basin. This is due to the terrain, as carts could be more easily used for transportation in mountainous areas. This shows how human habits and craftsmanship techniques are linked to geographical landscapes.

The development from the earliest wheeled vehicles to modern-day transportation is very long and accelerated during the last century, although even the last German Emperor, William II, who reigned from 1888-1918, did not believe in their success. He famously claimed: "The automobile is a temporary phenomenon. I believe in the horse." He could not have been much more wrong in this respect. Today's debates about climate change, fossil fuels, and the change of transport politics (*Verkehrswende*) dominate our news, bringing wheeled transportation back into focus.

Despite early scepticism towards motorised transportation, which is so dominant in today's world, there is not a single day when we do not rely on wheeled transportation. The repetition of using wheeled vehicles daily becomes almost automatic, akin to the unconscious actions we take in our everyday habits: Even without thinking, we know that the wheel continues to turn, as echoed in the very popular children's song "The Wheels on the Bus", illustrating how deeply interconnected these behaviours are with our daily life habits. The question arises whether wheeled transportation already began as a habitual practice or is this a rather recent development?

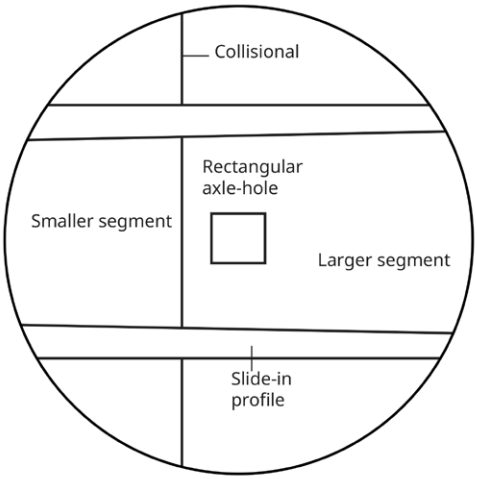
The earliest evidence for wheeled vehicles in Northern Germany comes from the megalithic tomb in Flintbek (Schleswig-Holstein), built between 3500-3400 BCE, where wagon traces show that these were used during the construction of at least one of the tombs. However, as the four-wheeled vehicles did not have a moving front axle yet, the wagon could not be turned around easily. The wagon in Flintbek, therefore, only moved forwards and backwards.

In Southern Germany and Northern Switzerland, where many wheels and axles have been found in the lakes of the Alps and the northern foothills, things were little different. Astonishingly, the disc wheels made from entire trees were fastened to the axle in a rectangular axle hole (Fig. 2) with the axle rotating underneath the cart.

This type of construction was not just a short-lived phenomenon, but rather remained in use for approximately 1,500 years until around 2200 BCE. The development of the cart in this area from the traverse, a kind of sledge, was used to transport material in mountainous areas. It is plausible to assume that the wheels and axles were easily disassembled when the terrain became too steep or narrow for wheeled vehicles. Thus, the cart could be turned back to a traverse when needed. This construction design did not change for a long time, as it seems to have been easier to use. In the Olzreuter Ried (Baden-Wuerttemberg), four full-sized wheels with rectangular axle holes were found, dated to 2897 BCE through dendrochronology. Alongside these, a toy or model wheel with a round hole was found, showing that both concepts of wheels were known at the time, but the rectangular axle holes were still the preferred choice.

The stiff front axles of the four-wheeled wagons in Northern Germany also remained in use for a rather long time, until at least the Bronze Age, although the stiff axles made this type of wagon difficult to manoeuvre. The discovery of numerous broken axle and wheel fragments found alongside a wooden trackway crossing a bog in the Northwest Frisian area is proof of the damages caused to wheeled vehicles when using them. Despite early attempts at "road" development made of wooden trees laid in a straight line to connect "islands" within bogs, the terrain remained challenging for transportation. In the following Bronze Age and the Iron Age, wheeled vehicles were used more frequently and are also found more often in excavations of burial contexts. However, the first evidence of profane uses of wheeled transportation in Central Europe, after the Neolithic finds, stems from Roman and medieval times.

So, do we see habits of rolling around in the archaeological evidence? It is highly unlikely that prehistoric people used wheeled vehicles in the same way that we do today. Building and maintaining a wagon or cart took a lot of effort as they were handmade. There was no cart or wagon dealership nearby where one could rent or buy such a vehicle, but the existence of specialists in wagon building cannot be excluded.



↑ Figure 2. Schematic drawing of a two-part wheel with a rectangular axel hole (Drawing: Sarah Bockmeyer).

What is visible in the archaeological record is how much time and effort was taken to preserve wagon parts, especially the wheels, which were often submerged in bog areas to soak and stop them from shrinking when the wagons/carts were not in use. It is unlikely that these vehicles were used to travel long distances or for leisure, but that they were probably only used as everyday objects. Using a vehicle in Neolithic times would have been anything but habitual, but rather a very conscious decision to attach the heavy disc wheels, to bridle the oxen and to be prepared to repair the wheels when necessary.

War chariots from the Late Bronze Age were found in burials in Southern Germany, when spoked wheels had long replaced disc wheels, and oxen were replaced by horses, although it remains unclear if chariots had been used or were simply prestige objects. In Roman times, the vast road networks made it possible to travel larger distances at faster speeds, thus connecting the different areas of the Roman empire. This shows that wheeled transportation had become more common, although research has mostly focused on chariots than everyday transportation.

In today's fast-paced world, a life without wheeled transportation would be unthinkable. We are reminded of our wheels when we have a flat tire on our bike, need to change from winter to summer tires, *etc.* We are also connected in a different way. It is now easy for us to go on holiday in France, Croatia, Denmark, *etc.* with the journey by car taking not much longer than a day or two and with planes reaching the destinations even faster. The world has grown together because of cars, trains, and airplanes and the speed they provide (Fig. 3).

The doubts that Emperor William had against the car seem misplaced in retrospect. However, its invention at the end of the 19th century and the further development in the years afterwards were not least possible because the world was ready for

← Figure 3. A train station serves as a junction point (node) (Photo: Sarah Bockmeyer).

this invention. Through the expansion of the British Empire, the colonies of various European states, and the westward expansion in the United States, the world had become even larger than in Roman times, and new and faster methods of transportation were needed to reach them.

> **» Speed [...] has been limited [...] by the capacities of the horse, whose maximum velocity is not much more than thirty miles per hour. «**
>
> ***(A. Huxley, after E. Duffy 2009, 17)***

Thinking back, until the development of cars, from the time of the domestication of the horse in the Bronze Age until the beginning of the 20th century, this was the fastest speed a human being could travel.

Our habits of driving around by bike, car, train and even plane today are impossible to trace back to the invention of the wheel in the Neolithic around 3500 BCE. Perhaps one could make a claim that the foundations of meticulously looking after one's car, which is almost proverbial for Germans in general, was laid in prehistoric times, if one thinks of the laborious watering of wheels in the Neolithic period. But this would be very far-fetched. However, it is something that connects us to past people. And without the development of wheeled transportation, for whatever reasons, horse-drawn carriages in medieval times would have been just as impossible as the development of the first trains or cars or even planes.

Today, we habitually use wheeled transportation to go to work and other places, without thinking about the careful maintenance that these vehicles needed in the past or the effort that prehistoric human beings had to make to actually roll around on wheels. ◆

Stefania Fiori, Laurenz Hillmann, Gianluca Ricci

Navigating the Past – Unravelling the Habit of Orientation

Nowadays, when we travel to a new place, our first reaction upon arrival is to take our phone out of our pocket and check Google Maps. The development of systems like this has eased our movement in a new place by replacing the 'old' habit of looking around to find the road. Google Maps and access to Wi-Fi connections provide a fast and easy solution, allowing us not to worry about finding a way to orient ourselves in a new environment.

This navigational adaptability is made possible by implementing the Global Positioning System (GPS), a technological marvel that stands among the most significant advancements in human history. The system has its roots in the early 1960s when the United States Department of Defence conceptualised a satellite-based navigation system for military purposes. The U.S. government first allowed public access in the 1980s, leading to a surge in civilian applications such as navigation and mapping.

In today's world, advanced GPS systems have become universal, thanks to their availability on every smartphone and their user-friendly interface. These devices operate within a sophisticated network comprised of satellites, ground stations, control networks, electronic receivers, and communication protocols, providing highly accurate three-coordinate location data within a few metres on the Earth's surface. This technology has simplified movement, eliminating the need for specific human assistance, and its widespread adoption, especially among the younger generation, highlights its positive impact and convenience. However, this convenience leads to problems when one finds oneself in a situation where the phone turns off, the battery is empty, or the connection is interrupted. Reliance on modern technology, removing the difficulties of orienting oneself independently, has led to a loss of orientation habits.

Over time, relying too much on GPS reduces people's motivation to remember and learn about the spaces around them, making it harder for them to create accurate mental maps. These mental maps are like the internal blueprints that our brains make to help us know where we are and how to get where we want to go. They're built from our memories and experiences, giving us a sense of direction and guiding us as we navigate through the world. Just like a paper map, these mental maps let us picture our surroundings and plan our journeys, whether we are exploring a new place or finding our way back home. In everyday life, maps are really important to help us understand and organise the layout of the world around us. GPS technology introduces the

prospect of orientation that relies entirely on the device's capability to depict position and movement and indicate the direction of travel.

This raises a fundamental question: How did individuals navigate without the assistance of modern technology or maps? When we delve into prehistoric times, when books and maps were absent, it becomes evident that certain knowledge was essential for spatial navigation. Although no direct evidence is available to answer this question, we can examine contemporary non-technological societies to glean insights into the methods that might have been used for orientation in the past. To unravel the complexities of orientation habit formation, we will examine practices among populations like the Inuit of the Igloolik region in Canada, the Aboriginal people in Australia, and the Tuareg in the Saharan region of Libya in Africa.

The tools used by the Inuit and the Tuareg provide interesting insights into how different cultures interact with their surroundings and create unique ways to find their way around. Non-technological societies show exceptional skills in figuring out where they are, using practices like memory and sharing stories. Indigenous communities have special knowledge to navigate around their home areas. This knowledge helps them with lots of things, like trading, acquiring resources, finding food in different seasons, meeting others, and finding good water sources.

Aboriginal communities in Australia have developed a unique tradition known as *'songlines'*. A *'songline'* is a cultural concept and guide for navigation. It represents a traditional path that connects important landmarks and locations, typically tracing the route of creator beings during *the dreaming* – a traditional period in Aboriginal cosmology that witnessed the formation of the world and its features. These *'songlines'* are handed down through generations and find expression in songs, dances, and stories. They involve creating and transmitting cultural and geographical knowledge through oral traditions, linking specific sites with cultural narratives, and serving as a guide for navigation across the land by offering detailed narratives explaining the significance of landmarks, rock formations, watering holes, rivers, trees, the sky, and seas. These oral maps provide comprehensive information about the importance of various environmental features. They function as a method for the communities to navigate and comprehend the landscape, serving as a means to preserve cultural knowledge.

In the Canadian Arctic region of Igloolik, the Inuit people have developed extraordinary skills in

» Non-technological societies show exceptional skills in figuring out where they are, using practices like memory and sharing stories. «

» Modern non-technological communities serve as compelling examples that offer insights into how prehistoric societies might have navigated and moved within their environments. «

land orientation. Grounded in a deep understanding of diverse environmental cues, their orientation habits encompass wind behaviour, snowdrift patterns, animal behaviour, tidal cycles, currents, and astronomical phenomena. Inuit wayfinding requires years of tutoring and experience. Travelers rely on their instincts to guide them towards their destination, adjusting their movements as they continuously observe and assess their surroundings. The Inuit approach is primarily oral, relying on visible landmarks on the horizon and the utilisation of wind bearings to pinpoint specific locations. This intricate wayfinding system not only reflects the Inuit's profound connection with their environment but also underscores the role of cultural knowledge for their survival. Passed down through generations, this oral tradition becomes a repository of wisdom, allowing individuals to traverse the vast Arctic landscape with precision and confidence. The reliance on observable natural cues and celestial guidance showcases a harmonious relationship between the Inuit people and the Arctic terrain, where each element serves as a valuable marker in their navigational journey.

A similar case comes from the Tuareg, a nomadic Berber people, primarily found in the Saharan region of Libya. Traditionally employing various methods for desert orientation, the Tuareg exhibit an intimate connection with the natural environment and a deep understanding of the desert ecosystem. Orientation is often associated with physical geographic features such as river beds, sand dunes, hills, and isolated trees in the landscape.

Additionally, devout Muslim Tuareg determine orientation in relation to Mecca, facing it five times a day while praying. The cardinal directions are intricately linked to the person in prayer, with east denoted as *'elkablet'*, meaning "the direction of Mecca". West is defined as *'defter akal',* "the country behind", while north and south are equally defined in relation to the person facing the sacred easterly direction.

These examples collectively underscore the wealth and variety of human strategies in navigating and orienting within their specific environments. They illustrate how cultural narratives and environmental factors contribute to the development of distinct spatial understanding practices across diverse societies. It is noteworthy, given the considerable geographical distance between these three non-technological communities, that they share common elements in their orientation habits, including the utilisation of oral memory and experiential knowledge.

Modern non-technological communities serve as compelling examples that offer insights into how prehistoric societies might have navigated and moved within their environments. These contemporary communities, often living in touch with nature and devoid of advanced technological aids, showcase the enduring effectiveness of traditional methods. The reliance on natural landmarks, celestial cues, wind patterns, and oral traditions observed in these modern groups reflects a continuity of practices that can be traced back to prehistoric times. It is possible to assume that the same elements were used among prehistoric societies, as this capacity is deeply connected with innate aspects of our brains.

The ability to orient oneself is closely linked with the evolution of cognitive abilities in the human brain, which played a crucial role in ensuring survival. Cognitive skills, encompassing problem-solving, memory, spatial reasoning, and social intelligence, provided our ancestors with adaptive advantages, aiding them in navigating their surroundings, securing food, avoiding threats, and establishing social connections. Through time, the evolution of cognitive abilities has enriched human behaviour, language, and culture, moulding the unique cognitive capacities that define our species. The brain's engagement in orientation is a dynamic process, continually adapting and evolving based on experiences and environmental stimuli.

Studying modern non-technological communities provides a valuable window into the past, shedding light on the ways our ancestors might have navigated and understood their surroundings. Habits, characterised as routinely occurring, subconscious behaviours, are typically ingrained through repetition and reinforcement. As individuals engage in repetitive experiences and consistent repetition of what has been learned, they develop a habitual orientation, involving movements through spaces, recognition of landmarks, and estimation of distances. This process creates strengthened neural pathways associated with these activities. Through repeated encounters, the brain connects specific environmental cues with directions and locations, empowering individuals to navigate spaces efficiently and confidently. This exploration of contemporary non-technological communities, in turn, offers a unique perspective on the past, drawing parallels and insights into how our ancestors navigated through and comprehended their environments. The insights gained contribute significantly to enhancing our understanding of human history and the evolution of spatial orientation skills. ◆

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Gianluca Ricci, Fiona Walker-Friedrichs, Darja Jonjić

When Common Habits Became Law – A View Back to Antiquity

The evolution of legal systems is a complex journey through human history. Ancient Greece stands as a captivating example of a society where common habits functioned as de facto laws. In this contribution, we will explore the transition from informal norms to codified legal systems, mainly in ancient Greece.

Historical background

To understand the significance of common habits as informal laws in ancient Greece, it is crucial to deepen knowledge on the historical context. The Greek world was constituted by city-states, such as Athens, Sparta, and Corinth, each with its unique governance and societal structure. Especially during the Archaic period (ca. 800 BCE-500 BCE), the absence of centralised legal codes marked a distinctive feature of Greek civilisation. The heart of this paper deals with how the ancient Greek population maintained order through shared habits and unwritten rules without formal legal documents: The concept of *'nómoi'* (norms), while not codified, held considerable sway over the daily lives of the citizens. In communities across the Greek world, norms dictated everything from family relationships to trade practices. To illustrate the application of common habits as laws, let us take a look at specific examples from various city-states.

In Athens (Fig. 1), the birthplace of democracy, the intertwining of democratic principles and unwritten laws was evident: the *'ekklesía'*, an assembly of citizens, not only participated in the legislative process but also upheld societal norms through

← **Figure 1. A view from Philpappos Hill to the Acropolis in Athens (Source: Wikimedia Commons; photo: Christophe Meneboeuf 2011; Available at: https://commons.wikimedia.org/wiki/File:View_of_the_Acropolis_Athens_(pixinn.net).jpg; CC BY-SA 3.0; https://creativecommons.org/licenses/by-sa/3.0/; edited).**

public discourse. Trial by jury, a milestone of Athenian justice, often relied on the jurors' understanding of community expectations, reflecting the influence of unwritten norms in the legal sphere.

In contrast, Sparta's militaristic society placed its focus on discipline and unity. Unwritten norms in Sparta were deeply involved in the rigorous training of young Spartans: The '*aghoghé*' – the state-sponsored education system – instilled a sense of duty, loyalty, and adherence to communal norms. Punishments for deviation from these norms were not always explicitly defined but were understood through the lens of shared expectations. Beyond Athens and Sparta, other city-states also showcased a spectrum of approaches to informal laws: In Corinth, known for its commercial prowess, trade-related norms that governed economic transactions emerged. For instance, to prevent disputes, merchants may have agreed upon common units for measuring grain, olive oil, wine, and other goods. This would have minimised arguments about the quantity of goods being exchanged. The convergence of unwritten norms across city-states was also evident in religious practices, where certain rituals and ceremonies were shared, creating a sense of cultural cohesion.

Comparing ancient Greek and Persian habits: Ethno-cultural differentiation

While ancient Greece developed its legal framework based on common habits and unwritten norms, it is crucial to acknowledge that other contemporary civilisations, such as the Persian Empire, had distinct approaches to societal norms and legal principles. The Achaemenid Persian Empire, known for its vast territory, which stretched from the Indus River Valley to the Balkans, and its cultural diversity, represents a strong contrast to Greek practices. Under rulers such as Cyrus the Great and Darius I, the Persian Empire implemented a centralised imperial governance system. This centralisation had profound implications for societal habits and legal structures: Persian habits and laws were influenced by the Empire's expansive reach, fostering a sense of unity under central authority (Fig. 2).

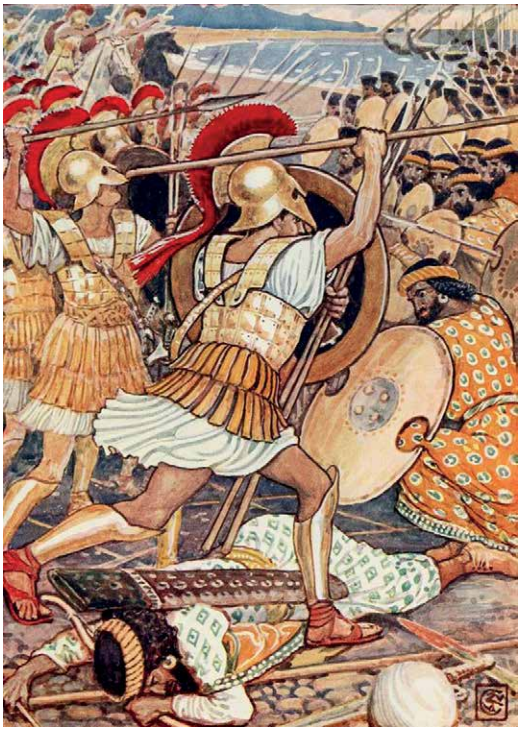
Persian kings issued royal decrees known as 'edicts' that carried the force of law throughout the Empire. These edicts exemplified the centralised authority's power to shape legal norms. The imperial habit of receiving and obeying royal commands became a defining feature, which was intended to unify the diverse cultures within the Persian Empire. The contrasting approaches of the Greek and Persian systems to governance and legal systems contributed to ethno-cultural differentiation. The Greeks, emphasising city-state autonomy and diverse civic identities, fostered a legal landscape shaped by local habits. This contrasts to the Persian Empire's expansive reach and imperial structure, which led to a legal framework influenced by royal decrees and centralised authority.

In Greek city-states, habits were deeply rooted in local autonomy: each city-state had unique traditions, laws, and governance structures, as described for Athens and Sparta. The habits formed within each city-state contributed to a rich tapestry of diversity, allowing for experimentation with various forms of governance.

Challenges and limitations

In Athens, the legal reforms of the statesman Solon during the 6th century BCE marked a pivotal moment. Recognising the need for clearer laws, Solon introduced the concept of written laws that addressed issues ranging from debt slavery to inheritance disputes. These reforms sought to strike a balance between preserving traditional values and adapting to the changing needs of society. In Sparta, the legendary figure of Lycurgus was credited with shaping the Spartan legal system (ca. 650-550 BCE). Although the historicity of Lycurgus is debated, the influence of a codified legal framework on Spartan society is evident: The *Great Rhetra*, the set of laws attributed to Lycurgus, aimed to establish social harmony through a systematised legal code.

Even though common habits served as a functional legal framework in Greece, challenges and limitations persisted. Here, the section on ethno-cultural differentiation already provides insight into



← Figure 2. Greek warriors storm the Persian army. Book illustration by W. Crane (after: M. Macgregor, w/o year, 137 fig. w/o no.); Source: Available at: https://en.m.wikipedia.org/wiki/File:They_crashed_into_Persian_army_with_tremendous_force.jpg; public domain; edited).

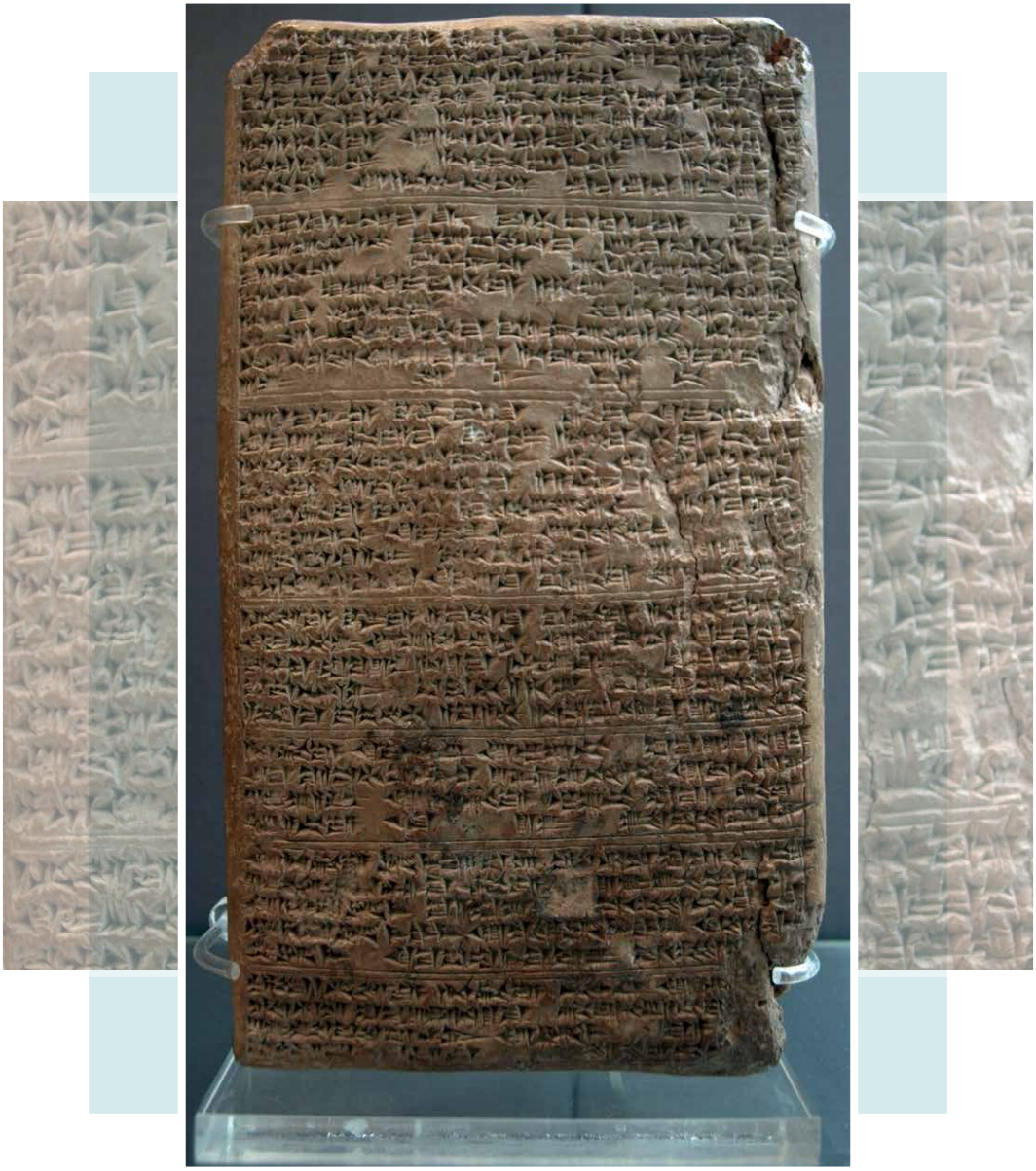
how different societal structures influenced legal practices and the subsequent challenges in reconciling diverse approaches within the broader Hellenic and Persian contexts. As Greek society progressed, the need for more defined legal structures became evident. The Peloponnesian War (431-404 BCE) and other geopolitical shifts prompted reflections on the limits of relying solely on unwritten norms, contributing to the establishment of more formalised, written legal systems.

Conclusion

In conclusion, ancient Greece provides a fascinating case study of how common habits functioned as *de facto* laws. The absence of a centralised legal code fostered a system reliant on shared norms that permeated all aspects of life, from family structures to trade practices.

However, the reliance on habits also presented limitations. The rise of codified legal systems in Athens under Solon and in Sparta under Lycurgus reflects the need for more defined structures as societies became more complex. Furthermore, the contrasting approaches – evident when compared to the Persian Empire's centralised legal system based on royal decrees – highlights ethno-cultural differentiation in legal practices across the region.

Understanding the evolution from informal norms to formal legal codes in ancient Greece offers valuable insights into the development of legal systems across civilisations. The Greek experience serves as a reminder of the power of shared customs and the ongoing tension between tradition and the need for adaptation as societies evolve. ◆



Anna-Theres Andersen, Darja Jonjić, Sara Mura

On Diplomatic Gift Exchange

Introduction

Some situations in our daily lives keep us occupied for days, even weeks. One of these epic challenges: the quest for the absolute perfect gift. We have all experienced it. For hours, we scour the endless shelves of stores, only to end up with a homemade gift voucher. But have you ever stopped to consider whether gift-giving is merely a habit or something more profound?

While our social media feeds are full of tags like *#gifting habits*, it is worth considering that 'gifts' and 'habits' do not really go together. Especially when it comes to selecting appropriate gifts in certain interpersonal settings, one should distinguish between 'habits' and 'rituals'. Diplomatic gift exchange, where political representatives present each other carefully chosen gifts while being guided by strict behavioural etiquette, underscores this differentiation and emphasises the ritualised nature of this exchange.

As defined in this booklet, '*habits*' are a repeatable sequence of actions, usually *unconscious* parts of our daily routines. However, as we have already noted, we are often *consciously* engaged in finding suitable gifts for a longer period of time: A gift voucher? Boring. A self-made mug? Doomed without pottery skills. Nowadays, diplomatic gifts are chosen with awareness and, due to their significant symbolic value, strategically thereby qualify solely as part of a ritual.

These gifting rituals are not just about the giving and receiving of nice gifts, but are rooted in centuries-old webs of political and cultural implications, as illustrated by the sociological studies of Marcel Mauss (1923/24 [2019]). By examining the connec-

» These gifting rituals are not just about the giving and receiving of nice gifts, but are rooted in centuries-old webs of political and cultural implications, as illustrated by the sociological studies of Marcel Mauss. «

← Figure 1. One of the Amarna Letters (EA 19), which documents negotiations between two rulers; ca. 1350 BCE. British Museum, London, inv. no. 29791 (Source: Wikimedia Commons; photo: User CaptMondo; Available at: https://commons.wikimedia.org/wiki/File:AmarnaLetterOfMarriageNegotiation-BritishMuseum-August19-08.jpg; CC BY-SA 3.0; https://creativecommons.org/licenses/by-sa/3.0/; edited).

tion between past and present, we can uncover similarities and differences in this ritual of exchange.

The diplomatic exchange of gifts then, as now, required maximum attention, as the actions of politicians had direct implications on international perception. The power of symbolism was central: A thoughtfully chosen gift for the other ruler could indeed strengthen the connection between the political actors, while an inappropriate gift could fuel political tensions. Politicians then, as now, had to uphold their own political interests without endangering the relationship. This balancing act is the essence of political meetings and negotiations. Through the socio-political etiquette of gift-giving and the choice of gifts, this balancing act can be deliberately influenced in a certain direction. In this contribution, we are exploring the history of gift exchange, especially within diplomatic contexts, to see how not only the gifts themselves but also the meaning behind them have changed over the centuries. Let us start with an example of gifts so grand and lavish that they even overshadowed "the elephant in the room" – literally!

Famous gifts through the ages

The most famous written sources, the so-called Amarna Letters, originated in present-day Egypt and are more than 3,300 years old; they provide invaluable insights into the contemporary dynamics of diplomatic relations (see Fig. 1). In these letters, kings openly expressed their preferences for valuable gifts from their counterparts, detailing the desired quantity and quality, ranging from splendid furniture and intricately crafted chariots to large quantities of gold and precious ivory. Ivory was an extremely sought-after raw material that had been presented as gifts to kings and elites of various realms even centuries before the founding of the Roman Empire. Recent scientific findings, using isotopic analysis, have narrowed down the origin of 3,000-year-old ivory to the territory of present-day Sudan. Its lucrative monopoly on trade with ivory could thus explain the rapid economic and political rise of the Nubian royal dynasty. This underscores the positive correlation between political power and economic wealth. Furthermore, this example highlights the prominent role of ivory and its central role in diplomatic exchange even 3,000 years ago.

Speaking of ivory: Historical written sources also provide evidence that not only the raw material of the elephant but also the animal itself was given as a gift in the Early Middle Ages. You might have heard of the term *'white elephant'*, commonly used in the English-speaking world, which alludes to something very expensive but practically useless. This term allegedly refers to a diplomatic gift that Charlemagne received from Caliph Harun al-Rashid: a white elephant named Abul-Abaz. The animal was brought from Baghdad to Aachen around 800 CE, involving significant logistical effort. When the elephant was finally presented to Charlemagne in public, the amazement for this majestic creature was so great that several written sources reported on this special gift (Fig. 2). Abul-Abaz thus symbolises not only royal power but also the appreciation and generosity of Caliph al-Rashid towards Charlemagne.

However, the significance of a gift does not always benefit the political relationship. Historical chronicles from 494 to 507 CE document a request that the Eastern Roman King Theoderic received from his political rival, King Gundobad. The latter was seen as a serious threat to the Eastern Roman Empire and requested two technological innovations of his time as a gift: a sundial and a water clock. As the chronicles reveal, Theoderic indeed fulfilled the request. According to the historical sources, he intended to highlight the superior craftsmanship of the Eastern Roman artisans through the expensive gift, thereby casting the Burgundian skills in a poor light. After all, the Eastern Roman craftsmen were well aware of how the coveted clocks were made and sought to demonstrate their own superiority.

Compared to the past, opulent luxury items and exotica are hardly encountered in today's diplomatic gift exchange. Although it is still customary to bring a gift when visiting abroad, there are specific guidelines regarding the value of a gift. Modern guidelines set by the Australian government, for example, impose limits on the monetary value

↑ **Figure 2. A symbol of the political relations between the Caliph Harun al-Rashid and the Frankish Emperor: The arrival of the elephant Abul-Abaz at the court of Charlemagne (Drawing: unknown artist; from: Yonge 1878, 71).**

» Compared to the past, opulent luxury items and exotica are hardly encountered in today's diplomatic gift exchange. «

of gifts between 300 and 750 Australian dollars. A famous example of a gift tradition in which the symbolic value outweighs the material value is the annual Christmas tree that the Norwegian capital, Oslo, has been giving to its British twin city, London, every year since 1947 (see Fig. 3). The tree is erected on Trafalgar Square and symbolises friendship and gratitude between the cities. Originally intended as a thank-you for British support during the occupation of Norway, it marks the beginning of the holiday season. Although the monetary value of the gift is not the main focus, the aim of the Christmas tree is to present a culturally significant gift, symbolising the enduring positive cultural connections between Norway and Great Britain. Gifts can also have a personal touch. In 2014, Australian Prime Minister Tony Abbott presented a surfboard to American President Barack Obama, known for his enthusiasm for water sports. The surfboard was custom-made and adorned with the flags of both countries. Thus, the two modern examples illustrate that diplomatic gifts nowadays are more of a symbolic politico-diplomatic gesture of courtesy.

Summary

As we have seen from the examples, we can trace diplomatic gift exchange both in the past and modern times. However, the nature of gifts has evolved somewhat. In the past, exotic luxury items and valuable objects were popular gifts used to demonstrate generosity and one's own wealth. Nowadays, symbolic gifts hold greater importance than their material or monetary value. This illustrates how diplomatic gift-giving has transformed over the centuries from a material gesture to a symbolic expression of friendship. It also became clear that diplomatic gift exchange can be seen as a sort of *negative* example when it comes to habits. Gifts are *consciously* chosen, and their presentation requires tact to avoid misunderstandings. Therefore, it is not accurate to describe it as a habit, *i.e.*, a repetitive action or even a daily routine. The conscious approach of selecting and presenting a political gift suggests that diplomatic gift exchange should instead be regarded as a ritualistic practice. This can also be relevant in everyday life when searching for your next gift to make: The monetary value may be less important than the thought and care invested in choosing the gift. ◆

↑ Figure 3. A gift-giving tradition that has taken place annually between the cities of Oslo and London since 1947: the famous Trafalgar Square Christmas tree in London (Source: Wikimedia Commons, photo: Kathleen Conklin; Available at: https://commons.wikimedia.org/wiki/File:Trafalgar_Square_-_Tree_and_Natl_Gallery.jpg; CC BY 2.0; https://creativecommons.org/licenses/by/2.0/; edited).

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Sara Mura, Stefania Fiori, Florian Schwake

From Habitus to Habits – Understanding the Threads of Cultural Behaviour

How do you greet someone? In Southern Italy, they kiss each other on the cheeks twice. In the Netherlands, three times. In Normandy and Brittany, even four times. In Germany, people are a little more reserved: a handshake (Fig. 1) or a hug for a close friend is enough. In Japan, a simple bow is sufficient. Depending on the cultural background of where we live, different manners and practices became standards for acceptable behaviour. Due to continuous repetition, they become unconscious habits. Travelling abroad may require us to adapt our behaviours to better interact with the local population and their habits. By consciously respecting and practising foreign and different behaviours, we might acquire new manners, unconsciously, changing our habits.

↑ Figure 1. Greeting with a handshake (Source: Wikimedia Commons; photo: Rufino Uribe. Available at: https://en.wikipedia.org/wiki/Handshake#/media/File:Hermandad_-_friendship.jpg; CC BY-SA 2.0; https://creativecommons.org/licenses/by-sa/2.0/; edited).

Greeting customs are but one example of the myriad of interactions that we perform during our life. Every encounter with other people and cultures contributes to shaping our behaviours and moulding our identity to a certain extent. In sociology, the study of human society, these acquired traits and behaviours are defined by the concept of *'habitus'*, a term popularised by the French sociologist Pierre Bourdieu. The focus of the concept of *'habitus'* revolves around the notion that an individual is inherently shaped by their social and physical environment. Our attitudes, appearances, and lifestyles are affected – amongst other things – by social experiences and interactions within specific cultural contexts. From the way we greet others (Fig. 2) to the language we use and our navigation of social hierarchies, these behavioural aspects are not innate but rather assimilated throughout our lifetime based on variables such as our country of origin, region, city, family,

and social circles. Once internalised, these behaviours become a lens through which we perceive and evaluate the world. They shape the way that we, mostly unconsciously, engage and interact with others. This ongoing process also gives rise to unconscious actions, forming what is referred to as habit. Essentially, the concept of habitus underscores the significant role that our surroundings, both social and physical, play in determining what constitutes us, how we behave and who we are.

In the larger picture of human society, habitus acts like a red thread that connects our personal experiences to broader cultural settings. It highlights how social influences shape our personality and our behaviour. Understanding the concept of habitus helps us to recognise the complexities of human interactions and the subtle imprints on which our behaviours are based – creating an awareness of the world around us. In our globalised world, understanding habitus becomes more relevant. Not dismissing what is foreign and different, but approaching unfamiliar customs with an open mind, with the realisation that what may seem odd is just a result of unique societal influences that have their own history. Embracing this understanding promotes cultural empathy and paves the way for a more connected world. ◆

↑ Figure 2. Greetings in different languages (Image: Florian Schwake).

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Sara Mura, Sarah Bockmeyer, Anastasiia Kurgaeva

Death Before Our Eyes – Remembrance in Everyday Life

We are creatures of habits – also when it comes to keeping the memory of loved ones alive as long as possible. For a long time, statues or paintings, for example, were used to commemorate the deceased and preserve their appearance. In the contemporary world, digital media and Artificial Intelligence (AI) have taken over this task and have become the ultimate long-lasting storage media, so much so that they are used to memorialise the dead and keep communication open.

Academic research has recently started investigating the phenomenon of social media platforms and mobile apps used by friends and families to make the deceased perpetually present and accessible. Yet, this tendency was not created in modern times. Making the dead part of our daily private life in domestic environments through a realistic image of them is a long-time convention that we have engaged with, adopted, and adapted according to our resources and cultures. We use realistic images and engage with them without thinking about it. Using them has become more or less a habit.

← **Figure 1. Plaster cast of a child's face discovered in the tomb of Claudia Victoria in Lyon in 1874. Lyon, Musée gallo-romain de Fourvière / Lugdunum (Source: Wikimedia Commons; photo: User Rama. Available at: https://commons.wikimedia.org/wiki/File:Face_of_a_child-MGR_Lyon-IMG_9850.jpg; CC BY-SA 2.0 FR; https://creativecommons.org/licenses/by-sa/2.0/fr/; edited).**

As global evidence indicates, creating an image of the deceased frequently begins through a ritualised process, typically linked to funeral customs following an individual's passing. However, archaeological evidence is scarce when examining the utilisation of these images in private contexts. This article specifically concentrates on Europe, with one of the earliest instances of such behaviour in the region traced back to the Roman period. In the *atrium* of private residences, the most prominent place in the public part of a house, wax masks moulded of the face of a person – likely when still alive – were kept with the utmost care. The *atrium* functioned as a welcoming space for guests, dependents and clients. Although the cupboards containing the *imagines* were typically closed, the labels beneath them remained visible and legible, allowing visitors to connect with the historical figures represented by the images. This constant interaction with the public extended across various aspects of life, including funerary customs, political engagements, and daily life in general.

The wax masks mentioned in ancient written sources have not survived. All that we have left are

← Figure 2. Portrait of Isabella d'Este by Titian (ca. 1534-1536) as an example of female portrait painting of the Renaissance. Oil on canvas, Kunsthistorisches Museum, Vienna, inv. no. GG 83 (Source: Wikimedia Commons. Available at: https://commons.wikimedia.org/wiki/File:Tizian_056.jpg; public domain; edited).

» Painting contains a divine force which not only makes absent men present, as friendship is said to do, but moreover makes the dead seem almost alive. «

the plaster moulds of young children and adults (both male and female) found in Rome and the Roman provinces of Gaul (today's France), Portugal, and Greece (Fig. 1). These casts are probably similar to those that were used to make wax masks in domestic settings. However, archaeological evidence and ancient written sources reveal that this practice, originally reserved for nobles and the highest magistrates, spread throughout the empire in the late 1st-early 2nd centuries CE among families of lower levels with access to the Senate, and lasted until the 5th century CE.

As an imitation of imperial fashions, Roman domestic houses across the Empire were also adorned with realistic private portraits sculptured in marble. This practice appears to have been in use until the 6th-7th centuries CE, although the location of these busts remains unclear. Overall, using wax and stone as expressive mediums, Romans had the means to narrate their tales and shape their visual legacy. This allowed them to establish a persistent and familiar presence of the deceased within the household, leaving an indelible impression on both residents and visitors alike.

This ancient practice was not lost. Almost one thousand years later, Renaissance elites adorned their palaces with ancestors' images. Stone busts were not only located inside the residences but also embedded into the private architecture, either on the façades or above doorways. Moreover, paintings on canvas – commissioned by the person while alive or by the family post-mortem (Fig. 2 and Fig. 3) – found a place in the galleries of private households.

For example, husbands and male family members cherished and commemorated the lives and memories of women who died because of childbirth through painted portraits. As the Italian Renais-

↑ **Figure 3. Mourning portrait of K. Horvath-Stansith, artist unknown, 1680s. Example of portraits of a recently deceased person displayed for mourners. Oil on canvas, Slovak National Gallery, Bratislava, inv. no. O 4842 (Source: Wikimedia Commons. Available at: https://commons.wikimedia.org/wiki/File:Posmrtn%C3%BD_portr%C3%A9t_K._Horvath-Stansithovej,_rod._Kissovej.jpeg; public domain; edited).**

sance humanist Leon Battista Alberti (1404-1472) wrote in his work *De Pictura*: "Painting contains a divine force which not only makes absent men present, as friendship is said to do, but moreover makes the dead seem almost alive" (Alberti and Grayson 1975, par. 25).

After the beginning of the Industrial Revolution (from ca. 1760 CE in Great Britain) and the rise of the middle class, portraits were also hung in more modest living rooms. Canvas portraits retained their popularity across Europe for a long time, driven by the common purpose of commemoration but manifested in diverse forms. For instance, in 17th-century Sweden, paintings depicting deceased children were also used for commemoration.

The advent of photography in the 19th century ushered in a new era, witnessing portraits captured on various materials and employed for different purposes. Notably, post-mortem photography gained prominence in Britain and France. Technological progress enabled the use of more affordable materials accessible to the masses, allowing the documentation of individuals posthumously, capturing them in natural poses either alone or amidst family. Much like canvas portraits, these photographs could be framed and displayed within the home. In contrast to common beliefs, post-mortem photography persisted until the first half of the 20th century in places like Iceland. Professional or amateur photographers, as well as close relatives of the deceased, captured images of funeral wakes, the placement of the body in the coffin, or visits to mortuaries.

Beyond their captivating uniqueness, these chosen examples illustrate through time how various cultures devised distinctive methods to integrate the deceased into their everyday lives, clinging to memories through visual media. As materials evolved, so did the relocation of these images around the house, eventually attaining the status of pictures that could be neatly stored in albums. In comparison, in modern Western societies, the presence of death has diminished over the past few generations. The reluctance to contemplate, discuss, or recognise death has severed the connection with the departed, relegating the memories of the deceased into the background. Yet, new visual media have become part of our lives, and conventions may change again.

Over the past two decades, digital platforms have revitalised the social aspect of our intimate grief, allowing the departed to vividly rejoin their network of family and friends. The departed are no longer secluded or hidden on the domestic premises. Smartphone technology has liberated us from the constraints of a PC terminal, enabling easy access to the memories of the deceased with a simple touch of a screen anywhere in the world. The Facebook generation, attuned to the pulse of the digital age, has not merely preserved the affective bonds with the deceased but reinforced them, infusing online platforms with the very essence of the departed's spirit. Much like talking with an image, visitors interact with these digital realms, leaving messages that transcend the physical, addressing the departed directly.

This communal continuation of the bond has become a hallmark of the contemporary grieving process that has been further developed in what is now termed '*grief tech*': By collecting someone's

story via text messages, audio files, images, and videos, artificial intelligence is used to simulate the individual's persona after their death. As the name of this technology suggests, its goal is to help the living throughout their grieving process. Apps, such as MindBank Ai, StoryFile, and DeepBrain AI, are at the vanguard of this new market, creating digital twins, ghostbots, and holographic replicas. These tools, including chatbots that strive to replicate not just the appearance but also the voice and personality of the deceased, usher in a novel era where the dead are not only visible but capable of "responding".

As society grapples with these unprecedented advancements, questions arise about the role of these technologies in our daily lives. Are these tools destined to become the new integral components of our routines rather than being merely relegated to offering a therapeutic sense of closure? Only time will tell the true impact of this paradigm shift. It is not merely a reflection of the habits of the living but a nascent medium that seeks to immortalise the departed, blurring the boundaries between the realms of the living and the dead. The original intent for memorialising the dead through images has become a quest for digital immortality through visual media, and the evolving narrative of *grief tech* adds a compelling chapter to the ongoing saga of the human habits of commemoration. ◆

» It is not merely a reflection of the habits of the living but a nascent medium that seeks to immortalise the departed, blurring the boundaries between the realms of the living and the dead. «

Florian Schwake, Stefania Fiori, Katharina Zerzeropulos

Turns in Archaeology – Breaking Habits in the Humanities

Archaeology is by definition the study of ancient things, groups of objects or civilisations. Its name is derived from the ancient Greek terms ἀρχαῖος ('old') and λόγος ('the study of a particular object or subject'). The scientific discipline of archaeology with all its specialisations – among others Pre- and Protohistory, Classical Antiquity or Egyptology – has developed and changed since its (academic) beginnings in the 18th century.

Since then, new research questions and methods were developed in collaboration with other humanities and natural sciences to further explore past cultures. Thus, over time, some ways of thinking, traditions and practices have been abandoned in order to create new habits. In scientific jargon, these changes are referred to as *'turns'*. The *'spatial turn'* serves as a good example how breaking (bad) habits can lead to new perspectives and thoughts. This enables insights into the reciprocal relationship between scientific research and current cultural, social and political phenomena and trends. Ultimately, this leads to the fact that we must constantly re-evaluate our biased preconceptions, theories and methods, move beyond them and develop new ideas and ways of thinking in order to progress as a society.

» Man erblickt nur, was man schon weiß und versteht. «

Johann Wolfgang von Goethe, 24 April, 1819 (quoted after: C.A.H. Burkhardt 1870, 29; transl. (eds.): "You only catch sight of what you already know and understand.").

← Figure 1. Portrait of Johann Joachim Winckelmann (1717-1768), painted in 1768 by Anton von Maron. Weimar, Classical Museum, inv. no. G 70 (Source: Wikimedia Commons. Available at: https://de.m.wikipedia.org/wiki/Datei:Johann_Joachim_Winckelmann_%28Anton_von_Maron_1768%29.jpg; public domain; edited).

Habits and turns

Johann Wolfgang von Goethe formulated the previous sentence: "You can only catch sight of what you already know and understand", which, in hermeneutic philosophy, represents a central problem in the humanities. Accordingly, our way of thinking, use of language and perception of things are largely influenced by our environment and cultural traditions, for example, by what we were taught at school or the university. This line of thought (see infobox on "Habitus and Habits" in this booklet) leads to the concept of *'habit'* used here. Habits are conditioned forms of action that are expressed – sometimes unconsciously – in the way we acquire, approach, and interpret information. These processes vary according to cultural influences and teaching, therefore there is no universal and uniform habitus among humans. This extends of course to the archaeological sciences as well. There is no uniform archaeological habitus, but rather only numerous different manifestations and habits of the researchers.

The scientific roots of archaeology were laid in the late 18th century by Johann Joachim Winckelmann, who established it as an art historical discipline (Fig. 1). Without breaking older habits, new methods and the latest technical inventions have been introduced and implemented since then, for example, archaeologists today excavate in accordance with stratigraphic layers – stratigraphy is the relative dating based on sequences of layers (strata) in the ground. Archaeologists use databases, connecting researchers across countries and continents, and use the newest technologies to document and digitise finds (objects) and findings (*e.g.* structures, buildings, *etc.*). Archaeology as a science has thus developed into the combination of historical, social, art, and natural sciences (see infobox in this booklet on "Natural Sciences in Archaeology").

A major driver of these changes is the implementation of new approaches and ideas from other disciplines, technological inventions, and social developments. This is referred to as a *'turn'*. Numerous turns have led to profound restructuring in the humanities and social sciences by defining new areas of research, introducing new principles and criteria, and reshaping theoretical models. Yet, the concept of what constitutes a turn is rarely clearly defined and can incorporate various aspects. What they have in common, however, is that they span across disciplines and are the result of (several) smaller events whose re-evaluation and endowment with a deeper theoretical and methodological foundation lead to a more influential turn. They are, therefore, proof and result of a collective effort within the sciences to work together across disciplinary boundaries.

The first turn that is referred to as such is the *'linguistic turn'*. It stems from debates in the philosophy of language in the early 20th century and involves various strands of Western thought. It centred on the conviction that all descriptions are formulated linguistically, both verbally and cognitively, with language as the tool that constitutes reality. Whereas linguistics had previously focused primarily on its

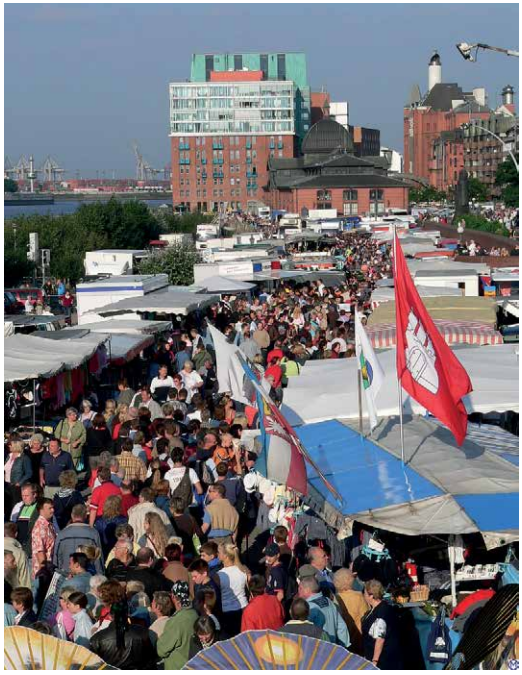
» A major driver of these changes is the implementation of new approaches and ideas from other disciplines, technological inventions, and social developments. «

structure, language was now brought to the fore as a conceptual tool.

This shift in focus from the object state of new fields of inquiry to the state of analytical categories and concepts is an inherent feature of a turn. Put more simply, this means a kind of conceptual shift, so that a formerly descriptive term is transformed into an operative concept that can shape and change. For example, in the course of the *'material turn'*, the view of objects changed from their function as witnesses of social or economic activity – *e.g.* amphorae as transport containers for oil and for connecting distant places – to media and carriers of signs, symbols and ideas – objects as carriers of concepts and a 'way of life'. This is something we are all too familiar with in today's capitalist environment. We are conditioned to need the latest fashion, a certain (life-) style, or colour of clothes to feel like we belong to a certain group. There have been and still are numerous turns in the humanities. In the following, we will take a glance at the *'spatial turn'* as an example.

The spatial turn

Already as early as the 19th century, the influential Swiss art historian, Jacob Burckhardt (1818-1897), and Heinrich Wölfflin (1864-1945) were the first to view built architecture as a concrete indicator of distinct cultural currents and features. However, it is thanks to Nikolaus Pevsner, a student of Wölfflin, and his successors that social and technical innovations were already being linked to the description and development of certain building types as early as the first half of the 20th century. Yet, it was the works of the sociologist and (social-) philosopher Henri Lefebvre (1901-1991) and Pierre Bourdieu (1930-2002) that laid the fundamental groundwork for what was later denoted as the spatial turn. Their ideas were later adapted by the geographer Edward Soja (1940-2015), who distinguished three different types of space in his 1989 publication: the (first) perceived, the (second) conceived, and the (third) lived space. On an objective level, space is perceived as a geographical area. It is what surrounds us or is in between buildings in cities or rural areas. For example, a market is a space varying in spatial extent, but with temporary stands where goods are sold and bought (Fig. 2). The archaeological record of a marketplace is, for example, holes in the floor for the installa-



↑ Figure 2. The Hamburg fish market in Altona with visitors (Source: Wikimedia Commons; photo: Wolfgang Meinhart. Available at: https://commons.wikimedia.org/wiki/File:Hamburg.Fischmarkt.wmt.jpg; CC BY-SA 3.0; https://creativecommons.org/licenses/bysa/3.0/; edited).

tion of shops, inscriptions on tablets, or remains of goods or their containers. These could be fragments of amphorae or dolia (large storage vessels set in the ground) in which the goods were stored. This is the conceived function of a market; it is a place of trade and commerce and forms the second space in Soja's model.

» (Social) space is a (social) product (...) the space thus produced also serves as a tool of thought and of action; that in addition to being a means of production it is also a means of control, and hence of domination, of power; yet that, as such, it escapes in part from those who would make use of it. «

Henri Lefebvre (1991, 26).

At the same time, it is also a place for social interaction and communication between people. We can envision sellers, buyers, and bystanders involved in a discussion about politics. Thus, the experience of life at a market can be perceived differently from individual to individual. This is what Soja called a lived space, an area of socialisation. In the concept of Bourdieu and Lefebvre, this social space is structured according to ideas and orders distinct to its inhabitants and their cultural imprint or habitus.

Architecture, or the built environment, is made accessible as a source of cultural information and traditions through a cultural system of symbols (semiotic systems). The built environment follows the ideas of a manifested political or economic structure, which can be decoded to grasp the social practices that fill the space, visualising, so to speak, the guiding principles, norms, and ideas of a society that would otherwise remain invisible and unnoticed. These assumptions result in an ongoing interplay of mutual influence between the environment and individuals or societies. The environment influences our actions and the social order, but at the same time can be reshaped and restructured to create a new order. In other words, our environment shapes us and our behaviour. But as we alter and redesign our (spatial) environment, we can also change our habits. This interplay can be detected frequently in ancient societies, especially after a change of the political and hierarchical structure. New rulers used buildings – like today – to implement their omnipresence into the lives of their subjugates. For example, in antiquity, one could not walk across the Forum in Rome without seeing a temple or another building, which was erected by an emperor. This omnipresence of the emperor was carried out from Rome to all cities of the empire through the medium of statues. In this way, the emperors structured and programmed the expected perception of the citizens to perceive them – or to have to perceive them – as patronising protectors and benefactors in everyday life.

Closing remarks

So, where did these turns lead? To a multitude of new ideas. Within the humanities, new research fields have emerged. In archaeology, new interdisciplinary foci on visual insights, the perception of (built) space, and its configuration have been set.

» In this way, turns are a symbol of what an open society – and humanity in general – can achieve when working together on a common goal. «

Additionally, a post- or non-human new materialism has risen, focusing on objects as independent actors and the interplay between objects and humans. This attitude coincides with new questions and directions that have also emerged outside of the scientific field in recent decades.

Another aspect is the interplay between modern socio-political discourses and science. There have been numerous turns in the humanities, most triggered by the conceptual thinking that originated with the linguistic turn. One of its main thoughts is that language creates and constitutes reality. This is a scenario that can no longer be denied in today's world, in which a multitude of (dis-)information sources proclaim different realities, presenting every society with new – or at least seemingly new – problems. This obvious interplay of mutual influence between the scientific field and our everyday life, its social orders and patterns, shapes our habits and diffuses into our research. Breaking (bad) habits and changing cognitive behaviour patterns in real life also modify the habits we have in science and vice versa. Accepting and implementing new knowledge and questioning the state of the art are the real drivers of progress. Both contribute to the advancement of a scientific field as well as society as a whole. In this way, turns are a symbol of what an open society – and humanity in general – can achieve when working together on a common goal.

In this sense, the central aim of the humanities has always been to inform the public and enable them to collectively learn from the past. Using the reasoning outlined here, the field of scientific research can be seen as a mirror and a great example of how a society should approach working on itself by fostering, testing and implementing new ideas, or by revisiting and renewing older concepts in order to move forward. ◆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Katharina Zerzeropulos, Anastasiia Kurgaeva, Henriette Brandt

Old Habits Die Hard? Bad Habits Die Harder! – Discrimination Throughout History

Why we need to talk – Discrimination today

The saying "Old habits die hard" is especially true when it comes to discrimination. Not only does it continue to "die hard" but it also has surely often become entrenched throughout history, like an old, deeply rooted habit. Indeed, we observe discrimination in every era of human history (Fig. 1).

You may ask yourself why an article in a booklet issued by a research cluster that mostly works with past societies would turn to something so present in our world. The quick and convincing point would be that by looking at the past, we may understand the present and maybe even the future. By taking a look at where discrimination derived, we can understand why change was necessary and why discrimination continues to be of the biggest problems in our society. Why have people discriminated against other groups for thousands of years? What were the consequences of this behaviour? Such considerations are useful in order to understand why discrimination is still so present today.

Unfortunately, the topic is more pressing than ever. One example is the Potsdam meeting on 25 November, 2023, at which a right-wing group adopted so-called "remigration" plans. These plans stipulate that people with a migration background

← **Figure 1. Historic photo of under-aged cotton pickers on a Mississippi plantation. Harper Stereograph Collection, Boston Public Library (Source: Digital Commonwealth. Available at: https://ark.digitalcommonwealth.org/ark:/50959/sq87d586q; CC BY-NC-ND, https://creativecommons.org/licenses/by-nc-nd/4.0/).**

should leave the country. These decisions triggered massive protests with hundreds of thousands taking to the streets. The world looks grim, but this is nothing new. On the contrary, it appears to be an almost sad habit of humanity to deny "others" their basic rights or to even turn to more drastic measures.

But before delving into when discrimination first appeared and how different societies implemented it in their realities, we should take a quick look at how the word *'discrimination'* actually should be defined and how it is associated with similar terms such as *'racism'* or *'inequality'*.

Types of Discrimination

The definition of discrimination can be summarised as mentioned in the IMISCOE Short Reader on Migration and Discrimination:

> **» Discrimination is the unequal treatment of similar individuals placed in the same situation but who differ by one or several characteristics, such as race, ethnicity, gender, (dis)ability, sexual orientation, or other categorical statuses. «**

Fibbi *et al.* (2021, 13).

Something else that should be noted when talking about discrimination is that it mostly becomes visible in comparison to other persons in the same situation, *e.g.*, person A is treated differently than person B due to their place of birth if it has a negative connotation due to a characteristic that the individual cannot choose and/or change.

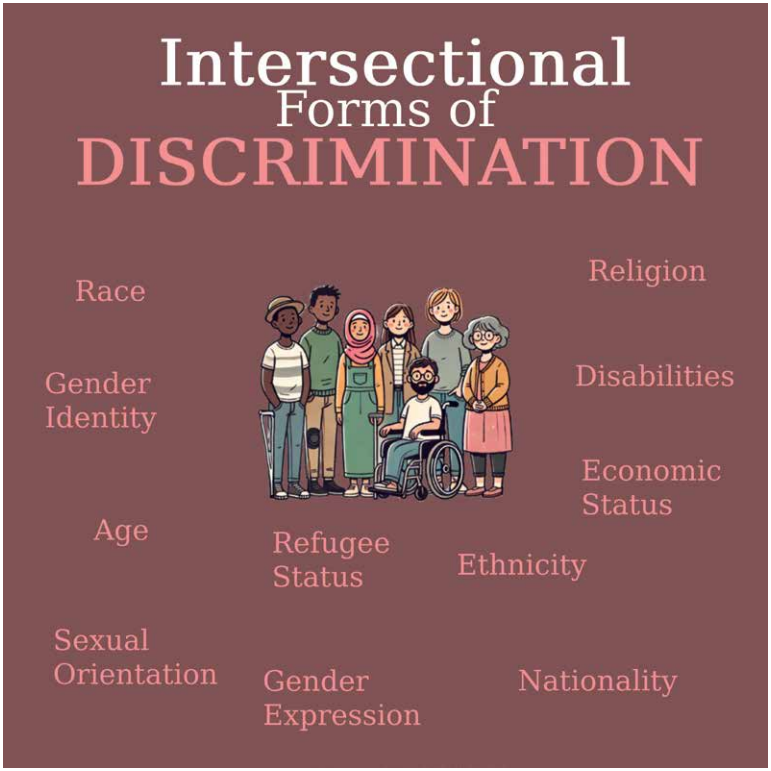
The Federal Anti-Discrimination Agency of Germany *(Antidiskriminierungsstelle des Bundes)* subdivides the term *'discrimination'* into further categories that should be mentioned for a deeper understanding of the nature of its scope:

1. **Direct discrimination:**
   Person A is treated less favourably than person B.
2. **Indirect discrimination:**
   Discrimination occurs due to neutral criteria, yet disadvantages are created by this for a specific group(s).
3. **Harassment:**
   Degradation or offense occurs due to belonging to a certain group.
4. **Intersectional/multiple discrimination:**
   Discrimination results from belonging to several groups, *e.g.* an individual from an ethnic minority may also be discriminated due to their sexuality, thus belonging to several minority groups that might face discrimination and unfavourable treatment.

Although not mentioned by the German Federal Anti-Discrimination Agency, discrimination can also occur on higher organisational levels:

5. **Organisational/institutional/systemic discrimination:**
   A range of policies and practices that contribute to the systematic disadvantage of members of certain groups.

But what makes discrimination a habit? The recurring use of discrimination throughout all sorts of societies during history shows clearly that this is not a seldom or random phenomenon. Very often it is the case that people do not even know that they discriminate because they either do not think that their behaviour creates a disadvantage or because they are not able to put themselves in the shoes of those who are being discriminated against. The habit of discrimination thus is an unconscious pattern that occurs in all sorts of settings throughout time. This is not to say that people are always unconscious of it,



← Figure 2. Intersectional forms of discrimination (Image: Katharina Zerzeropulos; created with elements of DALL-E [OpenAI] based on a graphic image from the UNHCR. Available at: https://www.linkedin.com/posts/unhcr_iwd2023-activity-7037666766046547968-k1Zg?utm_source=share&utm_medium=member_desktop&rcm=ACoAAFNSrF0BphmAojokZK7oczhG7XcT3fVXFnU; edited).

but this is often the case. However, this should not be an excuse for discriminating practices.

Discrimination yesterday

When having read the section on different types of discrimination, it becomes obvious that discrimination and disadvantaging certain groups have been around for a long time. A view into the past might help us understand and counteract discriminatory practices in our own lives.

One example is the term *'barbaric'* or *'barbarian'* when speaking about something that seems uncivilised or foreign. This word has its origin in ancient Greek society where outsiders or foreigners were called "barbarians" because their language sounded like "bar-bar" to speakers of Greek. Thus, "barbarians" became a synonym for "the other". Instead of admitting that they did not understand the foreign language, they devalued the foreign.

Another well-known example of discrimination in the past is the persecution of Christians during the Roman Empire. Although the popular stories of Christians being killed in Rome's Colosseum are often exaggerated, the discrimination against this group shows how religious differences were used as a reason for exclusion. The systematic persecution of Christians reached its peak under Emperor Diocletian (303-311 CE) before being ended by Emperor Constantine (306-337 CE), who converted to Christianity on his deathbed.

Women have also been systematically discriminated over centuries. In ancient Greece, women were mostly confined to the house and were not allowed to leave it without the consent of their fathers or husbands. In ancient Rome, they were always subject to the authority of the *pater familias* who had the right to punish all those under him, including women, children and slaves, at will. Even though such drastic decisions were rarely made, women were restricted in almost all areas of life. This trend continued through the Middle Ages into the modern era. Today, women are allowed to vote in many societies and are legally guaranteed the same rights as men, but they are often still subject to subtle discrimination, for example, by unconscious speech patterns. Yet in other parts of the world, women still often have significantly fewer rights.

One of the most extreme forms of discrimination was and remains slavery. Slavery has been observed in human societies throughout the ages. A particularly strikingly example was the enslavement of people of African descent in America in the 18th and 19th centuries. These people were forced to work on cotton, tobacco, and indigo plantations without any rights or self-determination. They often suffered from hunger, abuse and inhumane treatment. Even freed slaves had a hard time, as their skin colour continued to serve as a stigma. This form of discrimination continues to have an impact today, especially in the USA, where racism remains a current issue, even though slavery has long been abolished.

Europe did not lack discriminatory practices either. Although slave trade and slavery in general were not as visible in Europe as in the colonies, Europe benefited greatly from it. At the same time, nationalism started to develop in the 19th century, whereby people placed their own national identity above others and devalued minorities. This nationalism led to conflicts and the founding of nation states, ultimately culminating in the First World War.

After the war, this development was initially slowed, but nationalism returned with greater force. This led to one of the worst acts of violence in human history: the Holocaust. Millions of people were murdered under the National Socialist regime – Jews, Sinti and Roma, homosexuals, the disabled, and anyone who did not fit the image of the so-called “Aryan race”. Political opponents were also victims of this systematic persecution. The Holocaust marked a cruel and extreme form of discrimination that changed the world forever.

» Ideas that have contributed to our perception of discrimination as being wrong originate from the Enlightenment and historical developments that followed these ideas, for example, the French Revolution. «

History shows us how discrimination can lead to unimaginable crimes. The Holocaust was a turning point that made it clear that discrimination in any form should no longer be tolerated. It was the beginning of a new struggle – the struggle against discrimination (Fig. 2).

Ideas against discrimination

Ideas that have contributed to our perception of discrimination as being wrong originate from the Enlightenment and historical developments that followed these ideas, for example, the French Revolution.

A seminal idea that changed thinking profoundly was the rise of the individual. René Descartes coined this with his famous quote: "I think, therefore I am", from his work *Descours de la méthode* (1637 [1978]). He emphasised that every individual has a distinct existence and way of thinking, which forms the basis for the concept of equal treatment. Although Descartes was not directly part of the Enlightenment, his *"Cogito, ergo sum"* statement influenced later ideas such as the social contract and natural rights.

The idea of the social contract was introduced by Thomas Hobbes in his *Leviathan* (1651 [2023]). He argued that humans are naturally unequal and should, through an agreement, cede some rights to an authority to ensure protection and order. John Locke (1690 [2023]) extended this by emphasising the natural rights of individuals, which must be protected by governments. Jean-Jacques Rousseau coined the term in *Du contract social* (1762 [2018]) and emphasised the balance between individual freedom and collective order.

Voltaire and Montesquieu complemented these ideas by calling for the separation of powers and a limitation of state power to protect people's rights. These concepts influenced not only the Enlightenment but also the modern understanding of democracy and justice.

Discrimination tomorrow? A task for everyone

The problem of discrimination and intolerance is deeply rooted in our history and thus difficult to solve. Structures that developed in human societies over thousands of years are not easily broken down.

The realisation that discrimination is unjust was a decisive moment, which was made possible, above all, through the Enlightenment in the 17th and 18th centuries. However, the Enlightenment was not

» The tendency to categorise people is a characteristic that persists through human history. This pigeonhole thinking makes life easier, but it reduces the world to a simplified and less diverse version. «

only responsible for equal rights (which at the time primarily applied to white, heteronormative men) but also cleared the way for revolutions, civil wars and many modern developments. Ideas, such as individualism, human rights and rational thinking, demonstrated how discrimination damaged society. Although many topics of the Enlightenment were important, some of them had greater weight in their historical context.

The tendency to categorise people is a characteristic that persists through human history. This pigeonhole thinking makes life easier, but it reduces the world to a simplified and less diverse version. But without diversity, we lose more than we gain – no matter who we are. It takes effort to remain open for new perspectives, but only then can we learn to understand the world in its full entirety.

The main question remains: Can we, in 2025, break the habit of discriminating against others? The answer is complex. Progress is visible, but developments were never linear. Even in Western societies, where we try to minimise discrimination, it still exists.

Political measures show that discrimination is still a topic, but also that we are aware of it and actively combat it. After centuries of systematic discrimination, we are on the right track. But old habits die hard – and much work remains in order to finally overcome discrimination. ◆

Outlook

Anna-Theres Andersen, Sarah Bockmeyer, Stefania Fiori, Florian Schwake, Fiona Walker-Friedrichs

Habits are common phenomena in our daily life. This also applies to the human past. By examining human history, this booklet helps us to identify striking parallels – but also differences – in human behaviour compared with modern times. Some of these habits and behaviours have changed almost entirely, others have – surprisingly – stayed constant and unchanged throughout human existence. Thus, from prehistoric to modern times, three main aspects have been identified: the conservation or change, and the cyclic reoccurrence of these habits.

People had to "react" to new circumstances, and therefore, adjusted their behaviour accordingly. However, some behaviours recurred cyclically. Others seem to be stable, but a closer look revealed that these habits also changed, for example, by integrating or developing new technologies. In contrast, different characteristics of habits were conserved through time. The original meaning behind a specific habit was lost, but the action remained the same, becoming part of a tradition or ritual. The roots of modern habits were laid in the past. While their development through time and space left some almost unrecognisable, such past habits continue to influence people today.

By providing a glimpse into the human past, this booklet encourages readers to reassess their own behaviours in comparison to former ones. While the temporal, spatial and technological context may be different, a look into one's (own) past is always helpful in deciding whether it is worthwhile to consciously break habits and create new ones. Furthermore, this booklet illustrates that our habits are the result of our (social) environment and its influences. Although we may perceive them as occurring solely at an individual level, habits are driven and influenced by our specific social and cultural context. Therefore, changing or maintaining habits may require a significant investment of time and effort, but it could possibly be worth it to create a better future. ◆

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Imprint

»Old Habits Die Hard: Traces from the Past«

Published by Sidestone Press, Leiden
www.sidestone.com
www.sidestone.com | E-mail: info@sidestone.nl| Phone: (+31)(0)71-7370131

Layout, cover design, and image editing: Petra Horstmann and Tine Pape, Kiel
Copy editing & proofreading: Eileen Küçükkaraca and Matthias Halle, Kiel

A publication of the Cluster of Excellence ROOTS

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Leibnizstr. 3
24118 Kiel, Germany
www.cluster-roots.org

ISBN/EAN Paperback: **978-94-6426-394-7**
ISBN/EAN: PDF E-book: **978-94-6426-395-4**
DOI: **https://doi.org/10.59641/ii367lu**

Published with funding of the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy – EXC 2150 ROOTS – 390870439.

ROOTS cluster of excellence

Funded by DFG Deutsche Forschungsgemeinschaft

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Habits, as defined in this booklet, are recurrent, repetitive, or routinely performed actions with minimal conscious effort. They play a crucial role in shaping legal, environmental, and societal norms. The transition from informal norms to codified legal systems, the invention of the wheel, and the development of modern technologies, such as Google Maps, have all transformed human habits. Moreover, habitual practices, such as gift-giving, commemoration, and self-care, are deeply ingrained in everyday life, reflecting the evolving nature of human thought and cultural heritage. Thus, it becomes clear that habitual behaviours and patterns are deeply rooted in our cultural background, experiences and social interactions.

The booklet presented here collects contributions from young researchers at Kiel University in archaeological, historical, environmental, and linguistic sciences, offering rich insights into the practical, theoretical, and political aspects of habitual behaviour.

Moreover, the current booklet provides a thought-provoking view of the past and emphasises the necessity to understand the development of habits in order to shape present and future behaviour and interactions.

The contributions do not only trace bygone habits but also aim to establish a past-present connectivity. "Old Habits Die Hard" is a good read for people interested in reflecting on today's habits, because only those who know the past can understand the present and shape the future.

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sidestonepress
ISBN: 978-94-6426-394-7

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CAU Kiel University Christian-Albrechts-Universität zu Kiel