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Sarton Chair of the History of Science
Ghent University, Belgium

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Editors: Robert Rubens and Maarten Van Dyck

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Introduction

R.Rubens august 2024

You are about to read Sartoniana 37, 2024, containing the lectures of the Sarton Chair of the academic year 2023-24. They are again devoted to the broad field of the history of science in various disciplines.

Baker, the chair holder, develops a social vision upon the evolution of science in the twentieth and twenty-first century. It stresses the relationship between the research university as the basis of international based research. Mainly based upon the original German model universities changed from education centred institutions to pure research institutes.

The beautiful overview of Sunde details the birth and evolution of written law in Norway. The different stages as well writing, printing and recently digitalising are quoted. The evolution is conservatory and misses the central regrouping of laws, similar to the Napoleonic synthesis in the French empire.

The paper by Braet gives insight in the origin and formation of "developmental psychopathology", a new aspect of psychological research the last 50 years. The help and support of this new field in children with psychological problems has been paramount.

The epistolary discussion between two founding fathers of modern archeology, Caylus and Winkelmann, is the content of the communication of Moorman. It highlights the variable way wherein both authors started the approach to scientific archeology.

Adriaan Linterns gives a nice of the history of industrial heritage, an odyssea with ups and downs, including an intellectual battle with the different

governments of our country. The plea for a better preservation of the remnants and witnesses of the industrial history is loud and clear.

The report by Allais of the historical evolution of protecting buildings and works of arts is very important and necessary in a period in which unfortunately again war is present.

Finally as editor I wish to thank the secretary, Mrs R.Malfliet, who during all those years stimulated the different authors to submit their text. We can only hope that the edition and printing of those lectures during the past two decades not only pertains to a source to researchers concerned with the history of science but also to the maintaining of the Sarton legacy in Gent.

Thanking all the contributors of the past twenty years and the members of the Sarton Committee I wish all the best to Maarten Van Dyck who will succeed in the task of chairing the Sarton Committee the coming years.

Laudatio David P. Baker

Raf Vanderstraeten

The Sarton Chair of History of Science was established in the mid-1980s. It was created at the centenary of George Sarton's birthday in order to celebrate Sarton's contributions to the history of science and to stimulate further contributions to this field of research.

Nearly four decades later, at the start of the academic year 2023/'24, the Sarton Chair of History of Science has itself become an institution. It is widely recognized as one of the most important awards in this field of research. On the one hand, the reputation of both Sarton and of previous chairholders and medallists has contributed to the prestige of the award. On the other hand, this high visibility of the award is also due to the efforts of two people who served during all these years as the chairman of the Sarton Foundation or the Sarton Committee of Ghent University, viz. Michel Thiery and Robert Rubens. And I'd like to use this opportunity to thank Prof. Robert Rubens as well as Rita Malfliet, who assisted him during many years, for all their work on behalf of the Sarton Committee.

Sarton was an important and influential figure in the field of history of science. Not surprisingly, the first Sarton Chair holder was a former PhD student and collaborator of George Sarton, named Robert K. Merton. Merton had, among other things, taken up an active role in Sarton's journal *Isis*: Merton became Associate Editor of *Isis* in the late-1930s, first responsible for what was called "the social aspects of science" and, as of 1942, for "sociology" (see also Merton, 1985, 1988). He visited Ghent University twice in the mid-1980s, first to celebrate the centenary of Sarton's birthday and then, in November 1986, as the first incumbent of the Sarton Chair of History of Science.

In his inaugural lecture here at Ghent University, Merton spoke on the "Matthew effect in science". He looked again at his earlier, influential analysis of reputation mechanisms in science, which had been published in the journal *Science* in 1968. The term 'Matthew effect' took its name from a line in the biblical Gospel of Matthew: "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken even that which he hath" (Matthew 25:29). As Merton explained, both in the first and the second version of his reflections on the Matthew effect in science, eminent scientists will often get more credit than a comparatively unknown researcher, even if their work is largely similar. Or stated somewhat differently: credit – measured in terms of citations, invitations, prizes and honours – is skewed in favour of established scientists. Following Merton, this mechanism motivated scientists to establish their priorities and gain peer recognition for their work. He also argued that the peer review system, used to evaluate journal article submissions, and the citations and reference lists included in articles served to control the claims for new knowledge and for collegial esteem or peer recognition in science. In the words Merton used here, these practices had to control what was "a 'normal' response to institutionalized values" (1988: 45). He also did not hesitate to argue that these practices had always been present, although in varying degrees, from the 17th century, when modern science emerged, until the late 20th century (his own time).

Over the years, it has become increasingly visible that Merton's account paid insufficient attention to historical changes in the social conditions that define science. Basically, he believed in the necessity, and thus also the historical stability, of particular social structures, such as the peer review system. In the past decades, it has not often been the case that a sociologist is selected as the incumbent of the Sarton Chair of History of Science, indeed mostly historians of science are selected, but we are truly proud and honoured that Prof. David P. Baker from Penn State University (USA) has been selected as this year's Chairholder. Importantly, David Baker has been able to develop a historically-informed and -oriented sociological understanding of science in his many publications. He has, in his work, focused not only on the changing social conditions that define how scientific research takes place, but also on the impact of the worldwide explosion of scientific research on society at large.

In 2014, David Baker published *The Schooled Society*, a book in which he traces the impact of the worldwide expansion of higher education and of scientific thinking (as practiced in higher education) on the historical rise of postindustrial society and global development. This book is no doubt one of the most important studies in this field of research that has appeared in the first quarter of the twenty-first century. In more recent years, David Baker has deepened this perspective. He has looked, more particularly, at the ways in which our society is defined by science and by the global diffusion of the research university. Together with Prof. Justin Powell, who is also present today, he edited in 2017 a volume titled *The Century of Science: The Global Triumph of the Research University.* Currently in press, and also co-authored by Justin Powell, is an important monograph titled *Global Mega-Science* (Baker & Powell, 2024). This book focuses on the global expansion of science and the ways in which scientific research has come to rely more than ever before on collaboration in global networks. For the historical period from 1900 until 2020, this book not only shows how science has made global claims and how it has contributed to globalization, but also how the production of scientific knowledge has been transformed by different features of globalization.

With remarkable consistency, David Baker has tried to elaborate a sociological theory of science in its relation to society. Not many other scholars have cherished similar ambitions during the last decades. After Merton, developing such a theory in a historically-informed and -oriented way also cannot be but a daunting task. It was, however, not difficult to convince the Sarton Committee that David Baker is a worthy successor to Robert Merton as incumbent of the Sarton Chair of History of Science. And I am both highly pleased and honoured to invite him now to deliver this year's inaugural lecture.

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The Underappreciated University in History of Contemporary Science

David P. Baker

It is fully evident that universities play a crucial role in training scientists and providing a place for research endeavors. Since at least 1900, the consistent establishment of research-oriented universities, fueled by the increasing influx of students, has been pivotal in shaping the trajectory of scientific progress. Without this steady support, the recent history of science would have taken a different course, likely resulting in a significantly diminished scientific enterprise (Baker & Powell 2024). Globally, there exist tens of thousands of universities, from where faculty scientists consistently make substantial contributions to scientific advancements, benefited by increasingly complex collaboratives across universities and borders. Approximately 90% of the now over fout million annual scientific journal articles in science, technology, engineering, mathematics, and medicine (hereafter, papers) include at least one university-based scientist and a significant majority of these papers are authored solely by university scientists. The world's mainstream scientific journals, a reflection of the reach of science to more topics, grew from just under one hundred at the beginning of the 20th century to over eight thousand by the new century. As the volume of papers and subtopics of discovery continues to increase, so does the capacity of universities to train and hire aspiring scientists. Initially witnessed within a limited number of nations in the early 20th century, over time the magnitude and worldwide impact of these scientific dimensions have significantly expanded and disseminated, earning the fitting designation of "global mega-science." And behind the dispersion of mega-science is a more-or-less isomorphic cultural model for combining the educational and research missions within the single university, an

arrangement that is at once well-known and glossed over in the history of contemporary science.

The role of the university over the past century and one-quarter in fostering global mega-science has not been robustly considered, overlooking a key factor in the telling of this history. Too often, universities are portrayed as merely the stage for science and researchers obscuring their central actions in fostering the making of science as a maturing social institution with its contemporary dimensions. Their presence is taken-for-granted leaving their agency underappreciated. The well-known metaphor attributing 19th-century German-speaking universities as the "nurseries of modern research" offers a glimpse into their historical evolution, with universities in Berlin, Erlangen, Göttingen, Halle, Hanover, Heidelberg, Leipzig, and beyond contributing to this narrative. But mostly the historical account ends at the metaphorical nursery's door without much consideration of what this meant moving forward to the fully developed research university and its global impact on science. There are, of course, insightful histories from specific universities as well as histories of the development of the research-intensive university in specific countries over this period, and recent bibliometric analyses supports the centrality of the university in science (e.g. Geiger & Sá 2008; Musselin 2021; Powell, Baker & Fernandez 2017). Nevertheless, the larger global story of the university and its interconnections with the history of science as a social institution are still less explored.

Four points motivate a fuller incorporation of the university into the history of contemporary science. This first is what we now know about an unexpected synergy between the ascending social institutions of mass education and science; more a sociological insight, this relationship sets the plotline for the history of global mega-science. The ensuing three points are the specific roles the university played in that plot, each of which had specific timing and impact that should be woven into a comprehensive history.

The Education Revolution and Science

Although historiography is not sociology, they share significant connections, and overlooking one can impede the progress of the other. The cultural cradle of the education revolution – relentless expansion of all

levels of education eventually with the proliferation of universities worldwide – can be hypothesized to be in large measure responsible for global mega-science, and indeed the entire phenomenon of a knowledge society since the turn of the 20th century. The earlier disregard for this claim is partially attributable to the premature narrowing of focus within the sociology of science (Baker, Powell, Basit Adeel, Marques forthcoming). In the mid-20th century, influential philosophical discussions on science sparked a flourishing sociology of science, notably associated with Robert K. Merton, an early recipient of the Sarton Chair whose education at Harvard was influenced by the historical scholarship of this journal's namesake. However, instead of cultivating a broader scholarly agenda about institutional development, by the latter part of the century the sociology of science predominantly concentrated on micro-level processes such as hierarchies among scientists, while the pivotal role of universities in shaping scientific endeavors, an integral aspect of institutional development discourse, remained largely unexplored. (e.g., Ben-David & Sullivan, 1975; Latour 1987; Merton, 1968, 1973).

Also contributing to this was the delayed acknowledgment of the emergent schooled society catalyzed by the education revolution (Baker 2014). In the early 1970s, Talcott Parsons, one of America's most influential social theorists at the time, foresaw that the burgeoning formal educational sector could have transformative effects on the emerging post-industrial society like the industrial and democratic revolutions' impact on earlier liberal societies (Parsons & Platt 1981). However, the ascendancy of Marxist theory within contemporary sociology and the subsequent dismissal of structural-functionalism led to Parsons' insights about an education revolution and increased societal rationalization, chiefly by science, fading into obscurity, only to be revisited later in sociology (Baker 2014; Meyer 1977; Vanderstraeten 2015, 2023).

An invitation to tell the history of science through the education revolution of the late 19th and 20th centuries promises more than following the growth in the number of universities; equally important was a progressive change in the relationship between the university (and most forms of post-secondary education) and society. Universities became less elitist, less classical, and broader in scope of teaching and scholarship. For example, Prussia, then later Germany, was the education revolution's first-mover, from compulsory schooling to the expansion of its universities for a broad-

er segment of graduates of a growing secondary education system seeking new curricular degrees and occupations (Windolf 1997). Early in 19th century only two to five percent of young German men attended university, then from 1870 to 1930 university enrollment rates grew to twenty percent of male youth and for growing numbers of females. Even from a selective, highly stratified secondary education system, there was increasing inclusion from the middle ranks of German society into the university – sons of the bourgeoisie, large farm owners, technicians, artisans, and merchants were often the first among their extended families to attend university and were partially doing so in hopes of attaining new technocratic positions in the civil service including an early welfare state apparatus, and in large-scale firms with growing organizational complexity. Growing faster than in France and the U.S., Germany's approximately 30 research-producing universities would enter the century of mega-science with new sources of enrollment and more research capacity. For example, the larger U.S. would not surpass this number of research universities until the 1920s (Fernandez et al. 2020). A wider inclusion in the university was to support (cross-subsidize) faculty who taught some and researched extensively, or what can be called the "university-science model" that would spread worldwide (Baker & Powell 2024). Furthermore, universities changed themselves to include a wider range of scholarship including science. This was an overlooked major change: Central Europe's 18th century universities were moribund, embedded in a medieval model with deteriorating societal integration and with hopelessly small enrollments taught by faculties offering an inflexible ancient scholasticism – in short, the last organizational arrangement imaginable for scientific research (e.g., Paulsen 1895). By the Belle Époque, though, a new form of the university was well on its way. A form that would play three crucial roles in the development of global mega-science over the ensuing decades.

Switchmen of History

In *The Protestant Ethic and the Spirit of Capitalism*, published just after the turn of the 20th Century, Max Weber, a founding social theorist of western society, put forth an intriguing simile suggesting that emerging social institutions require historical agency beyond the evitable machinations of wealth and power:

> Not ideas, but material and ideal interests, directly govern men's conduct. Yet very frequently the *'world images'* that have been created by *'ideas' have, like switchmen, determined the tracks along which action has been pushed by the dynamics of interest.* (Emphasis added)

Since then, sociological theorizing and research into the historical development of social institutions builds upon Weber's foundational concept by highlighting the role of "institutional entrepreneurs" in switching tracks. These agents, whether individuals, informal networks, or formal organizations, play a pivotal role in orchestrating shifts towards new world images that provide the ideas for novel institutional arrangements that gradually monopolize and legitimize emerging norms, taboos, prescribed patterns of behavior, and value systems within a particular societal sphere (e.g., Abrutyn 2013; Colomy & Kretzmann 1985).

As noted above, a cluster of German universities, responding to the burgeoning force of an education revolution, served as institutional entrepreneurs by shaping the university-science model. This model fused modest teaching duties with ample time and resources for scholarly pursuits and research. Additional key organizational innovations included the introduction of academic seminars for scientific training. These seminars facilitated collective research endeavors, pairing seasoned faculty-scientists with students to engage in collaborative reading, discussion, and critique of ongoing scientific inquiries and theories, diverging from the traditional lecture-based and one-on-one tutoring approaches. Further to emerge in these universities were precursor structures to independent departments, equipped with teaching laboratories in various scientific disciplines such as astronomy, chemistry, mathematics, mechanics, physics, and technology. This period also witnessed the adoption of a "publish or perish" ethos within universities, reflecting a hard-won academic freedom from state intervention in both curriculum development and research. The dissemination of the renowned "Berlin system" of faculty development foreshadowed the contemporary global "star system" of faculty recruitment, emphasizing both the quantity and quality of scientific.

These changes were valued by the loosely connected eponymous Humboldtian ideals of academic freedom, unity of teaching and research, broadest inquiry, and primacy of "pure" or basic universal knowledge. Despite their widely acknowledged centrality as guiding principles, these ideals never represented a formally articulated organizational blueprint for universities

in Germany or elsewhere, nor did they fully spring from their originator Wilhelm von Humboldt, nor were they part of one concisely derived model arising from a single university at a single point, such as is often assumed about the University of Berlin (Ash 2006). Also, they were not a result of a consensual, unidirectional linear process, but instead came about through resistance, competition, inertia, and episodes of retrenchment. Nevertheless, educational and research missions gradually intertwined, granting increasing autonomy to both universities and the scientific enterprise. Science became integrated into the university's structure, benefiting from the entrepreneurial spirit of these institutions, which carved out "free space" by allocating distinct physical, temporal, and symbolic resources to scientific endeavors.

Common Corporate Unit and Collaborative Discovery

After the influences of the institutional entrepreneurs, the expanding institution of science required a common and resourced corporate unit. Like the state apparatus for the institution of modern law and the firm for the institution of a capitalist economy, the university came to play this role. By 1900 there were approximately 130 universities in Europe, North America, and a few other places with faculty-scientists regularly producing research as reflected by annual flows of papers in scientific journals in the then main languages of science (English, French, German, and Russian). And in the ensuing fifty years research-intensive universities doubled, operating in almost forty countries supported by a world postsecondary school enrollment rate that was itself doubling approximately every eight years (Baker & Powell 2024). Remarkably isomorphic in its mission, form, and operation across place and time, and through subsequent borrowing of innovations on the original university-science model from newcomers, such as mid- century American universities, universities worldwide acted as science's essential corporate unit (Fernandez et al. 2021; Kosmutzky & Krücken 2024; Levine 2021).

In addition to training future scientists and stemming from substantial cross-subsidies from their education mission, universities have come to monopolize, distribute, and safeguard physical and less-tangible symbolic resources required for research (Baker 2014). Throughout the 20th century, universities have been instrumental in credential verification, talent scout-

ing, recruitment, salary management, career advancement, and performance evaluation of scientists engaged in day-to-day research activities. They also establish and maintain internal hierarchies of research roles and allocate resources based on scientific expertise, experience, and effectiveness. Moreover, universities adjudicate and manage inevitable conflict and competition arising from the differing priorities of teaching and research missions.

As a result for example, contemporary research-intensive universities in the United States, whether public or private, typically comprise multiple colleges (or faculties) housing core discipline faculty-scientists who generate scientific output through independent research agendas conducted in established research facilities (Baker & Powell, 2024). These universities maintain a personnel classification system that routinely includes hundreds of faculty members across multiple colleges. These faculty members are supported by a highly skilled staff, often numbering at least twice their own, consisting of post-doctoral researchers and graduate students. Depending on the university's overall enrollment, on average, budget to sustain one faculty-scientist comes from a portion of tuition from ten undergraduate majors and 70 non-major students enrolled in the college's courses. Additionally, for every four core scientists there is typically one teaching-only faculty providing additional teaching. While external research funding from governmental agencies and non-governmental organizations is essential for acquiring specialized equipment, supplies, and further subsidizing scientists' research time, even substantial and regular external funding fails to cover the considerable costs associated with maintaining foundational research personnel and capacities within universities. Mega-science is also conducted at many non-university organizations and this trend has increased over the period, but universities remain the most productive and prevalent entities for research endeavors.

The university's expanding role in what can be called the "collaboration dividend" in contemporary research and publishing reflects its centrality as the corporate unit that sustains science as a social institution via intergenerational, interorganizational, and interdisciplinary exchange (Baker, Powell, Basit Adeel, & Marques forthcoming). In 1900 while most papers on scientific discovery in major journals were the product of collaboration, these tended to be proximate colleagues from the same university laboratory or field station, and only a miniscule number of papers included mul-

tiple scientists working across universities and even less across countries. A hundred years later almost all research papers in the STEM+ fields were collaborative, often across universities, and international collaborations grew to just over a quarter of all papers by 2021, translating into hundreds of thousands of papers each year resulting from scientists working jointly across the world in increasingly larger and more complex teams (Aksnes & Sivertsen 2023). Currently there are several hundred super-collaborative papers published annually by teams of 100 to over 3,000 scientists. The university's role as the primary organizational unit for scientific research and for training the next generation of researchers, has facilitated this progress, harnessing a collaboration dividend that not only optimizes the use of physical resources but also amplifies scientific human capital across geographical boundaries, thereby advancing the process of scientization.

Emerging after 1980, three international hubs of mostly university-based collaboration, one anchored in Northern America, one in Europe, and a later third one in East Asia drew in faculty-scientists from across the world in networks of scientific discovery. By 2010 there were over 38,000 universities with faculty-scientists regularly publishing research papers, often in various collaborations with other scientists at universities worldwide. All of which was supported by a growing university enrollment that would approach 40% of the world's youth by 2020. Although scientific productivity is often depicted as a property of individual countries, from its beginning contemporary science moved beyond the nation largely because of the university and the spreading education revolution. Transcending the confines of their host states and even geopolitical tensions, universities have implemented a model of university-science that aligns with shared objectives and practices, augmented by information technology. This framework has been instrumental in facilitating most scientific exchanges, leading to a substantial collaborative dividend in scientific productivity. This development stands out as perhaps the most significant contribution to global science during the latter half of the mega-science era.

Hegemony of the Scientific Paper

In addition to a common corporate unit, robust social institutions require what sociology refers to as a unique "generalized symbolic medium" for the purposes of value, exchange, and actions within the institution, such

as what legal codes and money provide for modern law and capitalism, respectively. The third historical institutional role the university has played is establishing the paper – peer-reviewed, journal research article – as the dominant medium of science. Scientists communicate in multiple forms, but the globally recognized gold-standard for declaring any and every discovery is to write a paper in a highly prescribed format, have it blind-peer-reviewed, vetted, accepted, and, finally, published in a scientific journal to be read by other scientists worldwide. And importantly, more than the preferred form of archivable formal communicative description of science, the paper has become the standard unit of value by which scientists obtain physical and intangible resources in organizational dynamics such as positions, salary, research funding, prestige, awards of recognition, and scientific reputation (Kaltenbrunner et al. 2020).

Even though papers have been part of science since the middle of the 17th century, their accepted authoritative value rose precipitously over the short span of the careers of Darwin and Einstein, with the university increasingly acting as a kind of fiduciary of the value of the paper ever since (Murakami 1997). The quality and quantity of a scientist's papers is the medium by which the university acts as the corporate unit, and this arrangement has spread widely to non-university research organizations. In many respects this role university has steadily supplanted the scientific professional association since the early part of the 20th century. Universities led the demand for elaborated, purchased bibliometric means to assess the value of faculty-scientists' papers from simple counts and informal reputations of journals to recent complex indexes of quantity and quality measured by statistically intricate citation analyses (e.g., indexes of: *h, h5, g, i10, Impact Factors, Field-weighted Citation Impact*). The basics of these were developed at mid 20th century and are now routinely employed throughout academia as currency in recruitment, scientific evaluation, and distribution of resources, as are other indicators of the greater societal impact of faculty-scientists' papers (e.g., *Altmetric* and *PlumX* indices) (Garfield 1955). Related are universities' public relations efforts in referencing numbers of papers as evidence of impact and progress on social problems for general media coverage, reflecting a heightening of the symbolic value of the paper (Brainard 2020). Also, over the mega-science period universities increasingly inserted themselves as a legitimate authority of control of the paper medium by routinely instigating and managing research misconduct investigations and handing out sanctions for fraud, plagiarism, scientif-

ic rule breaking, mistreatment of subjects, and exaggeration in findings, increasingly policed at rising standards, often tied directly to particular papers. Universities also keep account and react to paper retraction watches, interest disclosures on papers, and pressure for greater public access to technical details of papers.

An Invitation to the History of Science

In its ideation and consequence, the education revolution has produced a schooled society, arguably one of the major historical shifts in the institutional composition of liberal society over the course of a long 20th century. The cultural dominance of the university is at the heart of this change and its university-science model facilitated a thriving social institution of science to a degree unimaginable even at mid-century. A comprehensive history of contemporary science should explore the agency of the university: it is the hypothesized sociological plotline which only rich historical evidence can confirm, modify, or reject if overstated. Although not completely lost in specific historical accounts of both education and science, there is much yet to be examined.

Each of the roles of the university begs for more detailed historical research. How and why the university-science model developed are not well established, nor are counterfactual cases of other models for the late 19th century university that could have emerged. There is also potential for rich histories on the movement and adaptation of the model to different national cultures of postsecondary education and scientific research. Although the university as the corporate unit for science is well entrenched there increasingly non-university organizational forms, such as the research institute, and they too have long histories that intertwine with the role of the university (e.g. Dusdal et al. 2020). Why these only sporadically flourished early and then later became more university like in structure is an intriguing historical question. How universities have come to regulate science and advance the paper as the social institution's main medium are topics virtually void of historical analysis. Last, rich historical evidence makes for accurate assessments of the challenges for the future of higher education and science. There are emerging global demographic, financial, and political challenges to the future of the university-science model – with major implications for the sustainability of mega-science. A deeper understand-

ing of how the world has become so dependent on the synergy between mass education and scientific research is crucial to inform debates about its sustainability.

Mega-science, characterized by its inclination towards what has been termed scientization, embodies a central aspect of world society – authoritatively, science both deepens inquiry and reaches into ever more topics (e.g., Drori, 2003; Schofer & Hironaka, 2005). Whether viewed positively or negatively, it carries significant implications for the relentless rationalization of human collectives and all societal domains. Despite this, broader social theory often merely pays lip service to this observation. With the world's scientists publishing millions of new research papers annually, the capacity of the social institution has attained unprecedented levels. However, the mechanisms behind this achievement remain unclear. While factors such as military spending, geopolitics, technological demand, and collective wealth from capitalism are frequently cited as primary reasons, they alone are neither sufficient nor often directly proximate to the research process. Broader exploration of the profound impact of the education revolution, coupled with the transformative role of the university, promises to uncover more comprehensive historical understandings of contemporary science.

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Laudatio Jørn Ørehagen Sunde

Dirk Heirbaut

Jørn Øyrehagen Sunde was born in 1972 in a place not far from Bergen, the old medieval capital of Norway. He obtained his master's degree in law at the University of Bergen in 2000. He thereafter became an assistant at the Law Faculty of the Arctic University of Norway in Tromsø, the world's northernmost university. This meant working on the PhD throughout the polar night and without direct contact with his supervisor, the Oslo professor Dag Michelsen, who lived 1150 kilometers away. Yet, already as a PhD student, Jørn Øyrehagen Sunde made a great impression on foreign colleagues, particularly during a research stay at the Max Planck Institute in Frankfurt. Having returned to Bergen, he defended his PhD there in 2007. He immediately became a professor, first in the Law Faculty and soon thereafter in the Centre for Medieval Studies. In 2019, he moved to the University of Oslo as a professor in the department of public and international law. In addition, he also became a part-time researcher at the Norwegian National Library.

Jørn Øyrehagen Sunde is a very dynamic speaker at conferences. The students of his law faculty have awarded him the Lecturer of the Year Prize several times. His talent for generating enthusiasm with students, PhD students and colleagues had already become clear before he started his academic career. He was a guide at the Barony Rosendal, a historic manor house. Since 2015, he also works part-time as a researcher for the Barony Rosendal Museum and he has also published on its history.

Norwegian and foreign colleagues know Jørn Øyrehagen Sunde thanks to his many publications. This year, for example, he published two books and co-edited three others. In his publications, Jørn Øyrehagen Sunde deals with a broad range of aspects of Norwegian legal history, ranging from

gender and the law to property law. Among his favourite topics are courts and parliaments in Norwegian history. Two of his books deal with the recent history of Norway's Supreme Court, but he has also studied other Norwegian courts. In doing so, he has not limited himself to legal rules, procedures and judgements. He has also looked into the life of courts, paying particular attention to rhetoric in court and the importance of language in law. Although he is an all-round legal historian who has researched every era of Norwegian law documented in written sources, Jørn Øyrehagen Sunde has a particular love for the Middle Ages. This becomes most of all clear in the great research projects he has recently undertaken. They focus on the Code of the Realm of King Magnus the Lawmender, a ruler who was as important for Norway as Napoleon was for France. Like Napoleon, Magnus the Lawmender made a new national law for his country, with this major difference that his legislation preceded Napoleon's by more than five centuries. Given its importance, Jørn Øyrehagen Sunde has directed a research project on the textual and structural variations in the Code of the Realm, followed by another project on this 1274 Code and the City Code, which followed two years later. Moreover, with Erik Opsahl, he also managed a more general project on social governance and legislation, to which many European colleagues contributed.

As this indicates, it would be wrong to see Jørn Øyrehagen Sunde as a scholar of Norwegian legal history only. In fact, he constantly strives to put Norwegian law and its history within a broader context. Given the shared history with Denmark, to which Norway belonged in the early modern era and Sweden, with which Norway was together in a personal union of the kings of the Bernadotte dynasty in the nineteenth century, this context has led Jørn Øyrehagen Sunde to study Norway's place within the group of Nordic countries. However, he has added a Norwegian perspective by also considering Scottish legal history. After all, some parts of Scotland are closer to Norway than London. Jørn Øyrehagen Sunde goes beyond Norway and its neighbours by constantly adding a European perspective to his research. Readers can find a beautiful example in his article on the four daughters of God and their long journey to Norwegian law.

Due to his research on Norway in a European context, Jørn Øyrehagen Sunde has promoted a study of legal history and comparative law in which not just the legal systems of some great nations come to the fore but which also gives the law of other countries its due. Thus, the innovative book

Comparing Legal Cultures, which he co-edited with Sören Koch, also has chapters on, for example, Norway and Belgium. For his comparative research, Jørn Øyrehagen Sunde developed the concept of legal culture as an analytical tool, a novel approach which has found much acclaim with comparative lawyers. Jørn Øyrehagen Sunde has also contributed in other ways to the methodological development of legal science, as he has published both on the method of law in general and on the method of legal history in particular.

Although this laudation focuses mainly on Jørn Øyrehagen Sunde's great achievements as a legal historian, given that the Sarton medal rewards historical research in an academic discipline, an overview of his career would be incomplete without mentioning his attention to contemporary issues. Thus, he has worked on topics as diverse as fishing rights, petroleum licenses, climate litigation and human rights and digital law. He has also proven himself a staunch defender of Nynorsk, one of the two official written standards of Norwegian, which is closer to the original Norwegian dialects. In contrast, the other standard, Bokmål, has undergone many more Danish influences. Like Jon Fosse, laureate of the 2023 Nobel Prize for Literature, Jørn Øyrehagen Sunde tries to publish as much in Nynorsk as possible, contributing to its ongoing survival. Last but not least, Jørn Øyrehagen Sunde makes a tremendous effort to bring the academic world to ordinary people. For example, his work on the Code of the Realm also led to an exposition moving throughout Norway, which brought this medieval text closer to children. He writes in newspapers, appears on radio and television and has become a popular author in Norway. Thousands of copies of Jorn Oyrehagen Sunde's books on legal history are sold in Norway. He is also a great speaker; by now, he has given more than 600 speeches outside the academic world, bringing legal history to the public.

Law and Communication Technology
Lessons learned from Norwegian Legal History

Jørn Øyrehagen Sunde

1. Introduction

In 1980 David A. Funk, professor in jurisprudence and comparative law at Indiana University in the US,[1] published his classic article "Legal futurology: The Field and its Literature."[2] The article opens with a quote from 1976 by interdisciplinary philosopher and economist Kenneth Bouilding:

> Projections into the future, once we leave the realm of celestial mechanics, are notoriously unreliable…. Nevertheless, predict we must, because all decisions are about the future. When we are considering a rather stable and slow-moving aspect of society like the law, we have to think about quite long-run futures.[3]

Funk taught a course in world legal history, an interest that stemmed from his comparative approach to law. In comparative law, history is a tool to understand the reason for present differences and similarities between different legal systems. It is this idea of legal history that Funk applied in his call for legal futurology: "[I]t is useful to use legal history to trace the development to date of our laws and legal institutions. But, having done this, the next logical move is to extend historical trends as far as we can see."[4] The problem is that it is very limited how far we can actually see when

1 Funk 1997, pp. 643-644.
2 Funk 1980, pp. 625-633. Many thanks to my colleague Bruno Debaenst for bringing this article to my attention, and for our conversations on legal futurology.
3 Funk 1980, p.625.
4 Funk 1980, p. 627.

extending the line through past events into the future. The reason is that the slightest change in one single factor in a line of historical events also bring change to the entire composition of factors. Hence, predicting more than the immediate future this way is more entertaining than enlightening. However, this is not an argument for not using legal history to cast light on the future developments of law. The future is a much too serious a business to be left to charlatans looking into a crystal ball, creating media hype on the future of law. One example is the global hype on a soon-emerging robot judge in 2016 and 2017:

> When American Chief Justice John Roberts recently attended an event, he was asked whether he could foresee a day "when smart machines, driven with artificial intelligences, will assist with courtroom fact finding or, more controversially even, judicial decision making". He responded: "It's a day that's here and it's putting a significant strain on how the judiciary goes about doing things".[5]

No, the day was not there in 2016, and it is still not eight years later. Having studied the results of using ChatGPT on Norwegian law during the spring of 2024 and being member of a group on the merging of training a Norwegian language model on law the fall of 2024,[6] I see no robot judge emerging in the immediate future. Rather I see great opportunities. Even more importantly: I see the advantage of learning from previous periods with large legal change to better understand the changes taking place in the present. I will hence in my paper, delivered when receiving the Sarton medal in Gent in November 2023, apply a legal historical rather than the comparative-historical method prescribed by Funk in 1980, when investigating what changes digitalization will bring to law in the future. The paper is based on my book on law, communication technology, historical change, and rule of law, published in 2023.[7]

My method here will be to investigate the process of historical change in three phases of Norwegian legal history: 12th and 13th centuries when written law emerge to dominate over oral law, in the 17th and 18th centuries when printed law replaced written law, and finally the 20th and (as far

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5 *The Conversation* 16 May 2017, https://theconversation.com/why-using-ai-to-sentence-criminals-is-a-dangerous-idea-77734 <opened 13 March 2024> See also The Conversation on the Conversation: https://theconversation.com/global/who-we-are <opened 13 March 2024>

6 The language model is produced by NorwAI; https://www.ntnu.edu/norwai/new-language-models-in-norwai <opened 29. April 2024>

7 Sunde, 2023 *1000 år*.

as we have come into the) 21st centuries when digital law is about to take precedence over printed law. I compare these three processes to see what kind of questions emerge when new communication technology replaces old in the legal system. I use what is common in the two previous periods of change to predict what is facing us in the most drastic and accelerated part of a third period of change characterized by a digitalization of law.

This investigation is focused on Norwegian legal history. It is essential when investigating the "longue durée" in history to use detailed empirical studies as a/the foundation for generalization to avoid that the study becomes to abstract to have any explanatory force. The downside of using a particular geographical area is that the investigation is not immediately transferable to other geographical areas. The intent of this investigation is hence rather to inspire other investigations on comparable empirical data than making universal claims on the relationship between law and communication technology. This paper is, however, more like a concluding chapter than an empirical investigation, which I have carried out in my forementioned book.

My claim will be that communication technology does not change law in itself. It is first when other factors of legal change interact and move law in a new direction, that new communication technology is applied – firstly reluctantly – to speed up and make effective the process of change. The new possibilities offered by communication technology results in a legislation craze – a regulation optimism that causes large amounts of new legislation. However, the new communication technology is mainly used to make law. Governments have historically not taken responsibility for making law accessible. It is first when new communication technology is used to make law and make law accessible, that law can become transparent, and a state of rule of law becomes achievable.

Before moving on to explaining these results of my investigation, it should be stressed that the effect communication technology has on law has been studied before. Important contributions to the field are Michael T. Clanchy's *From Memory to written record – England 1066-1307* from 1979, *The Printing Press as Agent of Change* from the same year by Elizabeth L Eisenstein, (1979), David J. Harvey's *The Law Emprynted and Englysshed: The Printing Press as an Agent of Change in Law and Legal Culture 1475–1642* from 2015, and the recent *Government Use of Print – Official Publications in The Holy Roman Empire, 1500-1600* from 2021

by Saskia Limbach. However, only Thomas Vesting has investigated the effect of all the media of law – writing, printing and digitalization – in his *Legal Theory and the Media of Law* from 2018. Vesting's study is, on the other hand, far more a theoretical study of law than historical.

What I bring into this research tradition, next to investigating the long lines in history, is the rule of law approach. Rule of law is a rather late concept, but rule of law practices emerged already with the centralized government in the 12th century, if not before. The essence of the practices, and the later concept of rule of law, can be said to fall under the World Justice project's definition: "A durable system of laws, institutions, norms, and community commitment that delivers accountability, just laws, open government, accessible justice."[8] No open government, no rule of law. But is the law really transparent after the legislation craze triggered by the digitalization of law, creating a labyrinth of law?

2. The first lesson from history: New communication technology does not change the law alone

My first lesson from legal history is this: New communication technology is not a driver in legal change. Rather the opposite, since new communication technology has a tendency to be applied later in a legal context, and when applied, then with ambiguity. This has been the case when oral law was replaced by written law, written law replaced by printed law, and with the emergence of digital law. However, new communication technology has been adopted with various tempi, with the digitalization of law as the most speedily process.

Writing in an ancient communication technology. The Code of Hammurabi from about 1750 B.C. and the extensive Roman Law are examples of how writing has played a role in law for a long time. Even in the far-out part of Europe that in the early Middle Ages was known as *Nórvegi* – the way to the north, or Norway – the technology of writing has a long history. Instead of Latin letters and parchment, letters from the runic alphabet were carved in wood or rocks. The very name *Nórvegi* is first found carved in a stone from about the year 1030.[9] The runic alphabet was in use in Norway until

[8] https://worldjusticeproject.org/about-us/overview/what-rule-law <opened 7 May 2024>
[9] See https://uhs.vm.ntnu.no/en/the-kuli-stone-norways-baptismal-certificate/ <opened 30 April>

the 15th century.[10] However, the year 1000 is about the time when the Latin alphabet started to replace the runic with the extensive Christianisation of this northern part of Europe.[11] It has been suggested that the up till then orally transmitted law was written already in this century. This is, however, very uncertain. On the other hand, it is certain that the law was written in Norway in the 12 century.[12] For instance the legislation made in the name of the infant king Magnus V. in 1163 or 1164 was not only written, but even partly based directly on the written Canon and Roman law.[13]

The writing of law alone did not imply that written law was regarded as authoritative. An example of this we find in the Gulathing Law, a compilation of the law applied in the Gulathing province in western Norway, put in writing in the 12th century. The only complete surviving manuscript dates back to the midst of the 13th century.[14] At this time, there must have existed several manuscripts of the compilation. The scribe in the 1250s tried to harmonize the different manuscripts. However, for instance, when writing the book on family land, he simply gave up and instead wrote two sets of rules on the same issues, leaving it up to the reader to choose which one to rely on.[15] At a later point, frustration left the scribe writing a comment in the manuscript to his own text:

> Now we have committed to writing (our laws concerning) the defence of the country but we do not know whether the statement is right or wrong. But if it is wrong, we shall follow the legal regulations about our defence duties which we have had before and which Atle explained to the men in Gulen, unless the king wants to grant us other plans and we all agree to them.[16]

However, the status of written law would soon change. In 1274 King Magnus VI. the Lawmender issued his Code for the Norwegian realm, which consisted of written laws, to a large extent made by the king and not a compilation of previously oral law.[17] This did not mean the end of oral law

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10 See https://www.khm.uio.no/english/news/found-the-world-s-oldest-rune-stone.html <opened 3 May 2024>
11 Antonsson, on the use of the runic and Latin alphabet.
12 See the discussion in Helle, pp. 20-23.
13 Sunde, p. 86. The latter part of this legislation is partly based on the Digest 1.18.14, the Digest 48.9.9, Novellae 4.18.4 and Gratianus C.17 q.4 c.29.
14 Helle, p. 11.
15 Robberstad, p. 386 no. 2.
16 Simensen, p. 209.
17 See Sunde 2014.

– legal procedure continued to be oral, and still is in Norway today,[18] and customary law played a crucial role both in towns and in the country side until the 20th century. But written law now proved its quality, and by this became authoritative. In the 15th century, we even find references to the code as the holy law book, and the law book is almost treated as a relic that has the power to provide justice.[19]

A parallell slow process came about when the law became printed. The printing press was invented during the latter part of the 15th century. However, printed law was long scarce. Even a major piece of legislation like Constitutio Criminalis Carolina for the Holy Roman Empire from 1533, was initially produced in written manuscripts before printed in 1535. In Norway, now a part of the Danish-Norwegian kingdom, the law was not printed before the Code of 1274 was updated and printed in 1604.[20] In Denmark, the first piece of legislation was printed in 1537, but not more than a handful of statutes were still printed before 1600.[21] Even between 1600 and the issuing of a Danish Code in 1683 and a new Norwegian Code in 1687, the main rule was that new legislation was only written by hand and not printed.

This situation was partly due to a different understanding of legislation, implying that legislation could be aimed at smaller localities and even individuals. However, it was also due to scepticism towards printed law. Hence, printed law imaged written law, and was also signed by hand by the king to appear authoritative.[22] We even find that judges locally would copy printed law by hand to make it reliable. Between 1600 and 1660, we find that no more than 20 percent of all legislation was printed – some years the number of printed legislations made up over 30 percent of the total amount of legislation that year, other years 0 percent.[23]

This would change with the enactments of the Danish and Norwegian Codes of 1683 and 1687. From then on legislation was less local and less individual,[24] it was printed, and printed law was regarded authoritative.

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18 Nylund and Sunde, pp. 208-209.
19 Sunde, 2023 *Kongen*, p. 252.
20 Leslie-Jacobsen.
21 Secher 1887-88, pp. 1 (1559), 55 (1562), 109 (1561), 184 (1562), 413 (1569), 420 (1569), and Secher 1889-90, p. 28 (1578).
22 See for instance Secher 1903 no. 60, 61, 71, 113 s. 96 and 116.
23 Sunde 2023 *1000-år*, pp. 160-161.
24 Sunde 2023 *1000-år*, pp. 160-161.

It is symptomatic that when a constitutional assembly met at Eidsvoll in April and May 1814 to make a Norwegian constitution after the separation from Denmark, the constitution was drafted by hand, but immediately printed on a portable, military printing press. This was done both for the purpose of distribution, but also to meet the expectations that proper law was printed law.[25]

Also, the digitalization of law took time to gain authority in Norway, even if the time span was shorter than for written and printed law. The first academic articles on digital law were published in Germany after the Second World War.[26] Law was digitalised in the US from the 1950s, but it was first in the 1970s that full-scale digital search was possible on the digital legal platform Westlaw.[27] It was decided to establish a Norwegian, digital legal platform called *Lovdata* in 1981, which has been operational since 1983, and online since the mid 1990s.[28] In 2000 it was decreed that digital publishing of new parliament legislation had the same authority as printed legislation. Since 2015 Supreme Court rulings were no longer printed and are only published digitally, and from 2017 the same applied for all new legislation. In contemporary Norway, no major legal sources are printed, but only available on the digital platform *Lovdata*. In 2019, the printing of the compilation of Norwegian law used by most lawyers and students ceased. The news was partly received with a shock,[29] but it soon wore off, and in 2024 digital law has the same authority as printed law. And this year might be a turning point since digital law will from the fall of 2024 be used to train a Norwegian language model on law. AI-produced digital law might in some years be the most authoritative law of all.

25 See Sunde 2023 *1000-år*, pp. 183-184.
26 Pohle, p. 6.
27 Voedisch.
28 Stensrud, pp. 73–79
29 Kolsrud.

3. The second lesson from history: New communication technology changes the law in interaction with a series of other factors

New communication technology is not a driver in legal change, but more an enzyme; it has only consequences for the character of law when interacting with other factors of change. The process of interaction of these factors of change in the 12th and 13th centuries when written law replaced oral law, in the 17th and 18th centuries when printed law replaced written law, and in the 20th and 21st centuries with digital replacing printed law, is a large and a complex topic. As stated previously, this article has the character of being the conclusion of a whole book on the topic. This applies most of all to this subchapter, where the chains of arguments have to be omitted.

The law can be observed to change all the time. The reason is that law has a stabilizing role in society,[30] and hence it has to keep up with changes to such an extent that the divergence between law as a normative system, and life in society as fact, does not cause more unrest than frictionless interaction. However, not all parts of law change with the same speed. The Finnish legal philosopher Kaarlo Tuori has adopted a notion of the different layers of law from the historiographic French Annales School to explain the character of legal change. On a surface level legal rules change all the time. According to Tuori, on a middle level, notions of law found in legal culture change more slowly. Finally, the foundations of law almost never change.[31] This is a normative model that can be used to systematize observations from Norwegian legal history, where fundamental changes in law took place in the 12th and 13th centuries, the 17th and 18th centuries, and the 20th and 21st centuries.

Factors of legal change are many, and they vary with the different layers of law the change takes place. In Norwegian legal history, the factors that can be observed have played a vital role in legal change at the foundation level in Tuori's normative model of law, are 1) state formation, 2) value foundation, 3) idea of the individual, 4) legislative technique, which again can best be understood by looking at 4a) concept of time and 4b) mathematical reasoning. This list of factors of legal change is not at all exhaustive but

30 Tuori, pp. 84, 93 and 108.
31 Tuori, pp. 147-150.

make up the core. None of these factors alone have the power to cause fundamental changes in law. We can observe this from the fact that even in periods of fundamental change in Norwegian law, these factors do not start to change at the same time. It is first when all the factors are in a process of transformation that correlates with new communication technology, that fundamental change takes place. It is hence the interaction between the factors more than the individual factors that have caused the changes in Norwegian law at the fundamental level in Tuori's model.

The state is the political framework for making and applying law. Politics have to be transformed, for instance into law, and communicated to be effective. The state and its ability to pursue politics through law is hence closely linked to communication technology. In Norwegian legal history a central power able to govern using written law rather than immediate physical force emerged in the 12th and 13th centuries as the first step in state formation. In the 17th and 18th centuries, printing made the state able to produce more law and was thereby able to communicate its politics to a much larger audience, and on a much more detailed level. Digitalization made possible the formation of an effective transnational state, like the EU with which Norway is a semi member through the EEA agreement, communicating law over a vast territory and on a detailed level.

The politics of the state, pursued through law, have to be enforced to be effective. However, enforcement depends on the discovery of violations or conflicts of law. Discovery risk has throughout Norwegian legal history been more limited than violations and conflict opportunities. Due to this, law does not only become effective because of its ability to reach out, but also because it is sought by the inhabitants. One way this can be achieved, is by law being based on values that are shared, or can be made to be shared, with the inhabitants.[32] These values are transmitted with communication technology. Existing value systems are linked to existing communication technology. In Norwegian legal history, new value systems have hence replaced old ones using new communication technology, like the value system of the Catholic church in the 12th and 13th centuries introduced with written communication, and the value system of the Reformation in the 17th and 18th centuries introduced with printed communication, and the secular values with digital communication in the 20th and 21st centuries.

[32] Short on values and law: Tuori, pp. 170 and 228.

Politics based on value systems regulate, among other things, how individuals relate to other inhabitants, and to the state. The individual is both the recipient of the regulation and the object of it. The idea of the individual is hence both shaped by politics and value systems and are decisive for the politics pursued and the value systems that prevail. In short, with the Christianisation in Norway, especially in the 12th century, the notion of the individual changes, because it is the individual that can commit sin and that can receive salvation, and as a child of God has a right to protection. With the Reformation, especially effectful in Norway with the pietist movement from the late 17th century, salvation solely relies on the relationship between the individual and God, where the individual has to be active to uphold the relationship. As a consequence the individual also gets a right to be active, like the right to freedom of speech, next to the right to protection. With the secular turn in the 20th century, especially effectful in Norway after 1972 when family law was to a large extent made independent of religion, all aspects of individual life became solely a question of this life and not the afterlife. With this development came the right to be in society on equal terms, like the right to not be discriminated against. We can say that from taking a step out from the clan in the 12th and 13th centuries, the individual was in the centre of human society in the 20th and 21st centuries, and has gone from having a right to protection from violation to a right to act, and finally to be in society on equal terms.

The effect of politics pursued through legislation depends on the reception of the communication. For law to have the intended effect, the communication of law must obey to fundamental structures of knowledge. The two fundamental structures are the concept of time and mathematics.

The concept of time and law have recently been investigated by Andreas Thier.[33] The concept of time is decisive for how information is structured.[34] In the 12th and 13th centuries the concept of time went from punctual to circular,[35] and by this, legal rules went from being individual rules to being linked together to map out a legal field, like the year are made up of months that follow each other in a specific order. In the 17th and 18th centuries, the concept of time became linear,[36] and legal rules were put into a much larger system of law, where not only the legal fields were mapped out, but

[33] Thier. See also Sunde 2001.
[34] Thier, p. 27.
[35] See Thier's take on this concept of time, pp. 29-32.
[36] See Thier's take on this concept of time, pp. 32-34.

the entire legal system in both present and all foreseeable future. With the relativization of time,[37] when the time of the day was separated from the sun's position in the sky after 1884, it paved the way for two different, but linked, ways of thinking. Firstly, the unification of national law, just like the unification of national time. Secondly, to operate with parallel systems of law, just like operating with parallel time zones. This is how the trans-national state operates.

Mathematics can be seen as an ideal of how to create legal certainty in society, where there are more legal problems than human fantasy possibly can foresee. By using a mathematical model for legislation, the legal text can be structure to answer also the questions not directly addressed in the text. This has been the very key to successful legislation since at least the Middle Ages.

In the 12th and 13th centuries, algebra became important for structuring law. By giving a certain situation X a certain content, repeated each time X appears, law regulating different topics was interlinked, and more was said with less words. For instance, in the Norwegian Code of 1274, the situation necessity was given the content of a person being wounded or sick, and each time necessity appeared in the Code, wounded or sick did not have to be repeated. More importantly, when necessity appeared in a situation not regulated by law, the same reasoning could be applied, and the loophole of the law would be filled with the same law as applied in all similar cases.

In the 17th and 18th centuries, geometry was important for developing law. In this era of *mos geometricus*,[38] law was seen as a mathematical system, an idea promoted by not at least the mathematician and philosopher Christian Wolf. For instance, from math, we know that the angles in a triangle always are 180°. If angle A) is 60° and angle B) is 60°, we know angle C) must be 60°. If we in law know that the action theft is composed of three equally important facts A) taking someone else's property, B) in concealment, to C) enriching yourself or someone of your choosing, we know that A) taking someone else's sheep B) from the field at night to C) sell on the market, is theft. A) can be exchanged with goat, B) with barn at night, and C) with to cook and eat, but the action will still be a theft when we put these facts into the equation. Again, we see that the mathematical

[37] Thier, pp. 22-23, and see pp. 34-36.
[38] Stupp.

approach means that the loophole of the law can be filled with the same law as applied in all similar cases.

In the 20th and 21st centuries, algorithms became an important part of mathematics. An algorithm is simply the linked steps on the road to the solution to a mathematical problem. In law, it is hence the different if and so-steps towards the solution to a legal problem. This used to be a question of a) a legal problem, b) the facts, c) the law, d) the subsumption of facts under the law to find, and e) the legal rule that is the answer to the legal problem. From Norwegian Supreme Court practice today,[39] we can see that the legal problem has to be divided into subproblems like a1, a2, and a3. Each of these subproblems has its facts b1, b2, and b3, with corresponding law. However, it might be that the law solving subproblem a2 with adjutant facts b2, has to be related to national law c2a, EU-law c2b, and the European Human Right c2c, which increases the number of subsumptions of facts and law to d1, d2a, d2b, d2c, and d3, and the following legal rules to e1, e2a, e2b, e2c, and e3. First, when this part of the problem is solved, can the issues under a2 and a3 be dealt with. Legal reasoning can be said to always have been algorithmically, but the complexity of law within the national legal systems, and with the parallel legal systems, makes algorithm the very character of legal reasoning today.

When the political framework, the value foundation, and the understanding of the rights of the recipients of legislation change together with the legislative technique, the law has to change, and new communication technology comes in handy to make new legislation and to communicate it wide and in detail. This happened when written law replaced oral law, printed law replaced written law, and when digital law came to dominate in the 20th and 21st centuries.

[39] Skotnes, pp. 39-43 and 46.

4. The third lesson from history: New communication technology cause a legislative craze.

It is vital to keep in mind that it is not new technology that changes law, but an interaction between a set of factors, the most essential presented above. This insight blocks a claim that increase in legal material, for instance, legislation, is due to computer technology making the legislative process swifter and less resource-demanding.[40] The increase is instead due to large changes in society, and the new technology only makes it possible for the legislator to keep up with the changes.

As stated above, writing was used in Norwegian law from the 12th century. From this time former oral law was put in writing, and from the statutes from 1163/64 we see that Canon and Roman law, which was communicated in writing, also influenced Norwegian law. At the same time, dramatic changes in Norwegian society took place, like in the rest of Europe. These changes pushed for reform of the law.[41] Since the only surviving complete manuscripts of Norwegian regional law were put in writing in the midst of the 13th century, we can only reconstruct these changes by mainly seeing how Roman and Canon law was received to reform law.[42] What is striking is that it was claimed by King Magnus VI. the Lawmender in the prologue that the Code of the Norwegian Realm of 1274, that "[I]t seems to us that in many places, a full pronouncement could be made in fewer words where previously it carried on at great length."[43] This could of course have been pure rhetoric, since it is not an unusual justification of legislation. However, we can observe that when it was possible to choose between laws on the same issue from different legal regions of Norway, the less extensive and most simple legal rule was chosen. On one hand, this is also reflected in the volume of the Code of 1274 compared to the surviving manuscripts of the Older Gulathing Law and the Frostathing Law: the two regional compilations of law have respectively 319 and 439 chapters, while the Code of 1274 has about 220 chapters. On the other hand, chapters of law can be of different lengths. However, we find that the Code of 1274 actually contains

40 See predictions on what computers would do with the legislative process in for instance Ryan, and in Stoyles.
41 Padoa-Schioppa, pp. 71-72.
42 On such efforts, see Iversen, Sunde 2011 and Vogt.
43 Fridriksdóttir, p. 1.

fewer words,[44] as promised in the prologue, especially compared to the Frostathing Law, much revised with the advice of the archbishop and other learned men in the town of Nidaros.[45]

Society does not stop changing due to a new Code of law, and soon there was a need for updates, changes and amendments to the Code of 1274. There were issued 1.7 statutes a year in the Norwegian realm from 1280 to 1319. With a less and less strong central power from 1319 till 1389, the legislative activity decreased to about one new statute every second year.[46] New legislation was simply added to the manuscripts with the Code of 1274, until 1604, when printing as a new communication technology started to play a role in law. As in the Middle Ages, it all began with an ambition to make existing laws updated and clear.[47] In 1604 a translated and slightly revised version of the Code of 1274 was published. It was followed by new updates, changes, and amendments, compiled and printed in 1643. This continued, and an entirely new Code of law was prepared by the Danish-Norwegian king for both Denmark and Norway. In 1687, the new Code of law was issued for the Norwegian part of the Danish-Norwegian realm, replacing the about 220 chapters of the Code of 1274 with about 1800 articles, and about 65 percent more words.[48] This put an ease on new legislation for a while, with about 20 acts of new legislation issued every year. By the 1730s, a new code was planned to make the law more clear and accessible.[49] The work on the Code never got very far, and at the end of the 18th century, more than 100 legislative acts were issued every year to repair the deficits of existing law. The total amount of statues issued between 1687 and 1814 was more than 4500. In addition came administrative decrees, which were many times more numerous. Increasingly, it became more and more difficult to know what was actually the law, and the first Norwegian parliament, making the Norwegian Constitution of 1814, decided to have a new civil and a new criminal code of law within a few years, inspired by French legislation at the time. The criminal code was

44 The Gulathing Law, in the translation of Knut Robberstad from 1981, have 59 374 words without explanatory footnotes, while the Frostathing Law in the translation of Jan Ragnar Hagland and Jørn Sandnes from 1994 has 67 415 words including explanatory footnotes, while the Code of 1274 in the Translation of Jo Rune Ugulen Kristanssen from 2024 has 59 002 words including explanatory footnotes.

45 Hagland and Sandnes, p. xxx.

46 Sunde 2023 *1000-år* , p. 144.

47 Hallager and Brandt, pp. 3 – 4.

48 The Code of 1687 had 107 264 words, without explanatory footnotes.

49 Sunde 2007, pp. 121 and 133.

issued in 1842 but replaced by statutes on different aspects of criminal law from 1902. The civil code was never completed, and Norway is still today a country with a code of law from 1687, with only 5 of the about 1800 articles applied today, and about 700 supplementary statutes.

The pace of legislation increased with new communication technology but varies afterwards over time. A new, lasting boost in Norwegian legislation came in the 1980s with computer technology and digital law. Since 1985 the number of statues issued every year has increased by 30 percent. The amount of preparatory work accompanying the statutes, and in Norway an important tool for interpretation, has increased by 50 percent. The complexity of the statutes, measured by inter-legal connectiveness – how a statute is linked to other statues of law – has increased by 400 percent. The number of administrative decrees has in the same period increased with 100 percent. At the same time, the length of each decree on average increased by an additional 100 percent.[50] The legislation craze of the 12th and 17th centuries is repeated. And the reason is the same: Several factors are causing large changes in society, and there is a significant need for more law and legal reasoning. That is why there are more legal journals and more professors in law, and it is why the Norwegian Supreme Court writes almost twice as long decisions with three times as many references to legal sources.[51] New communication technology is not the driver in this process but makes it possible for the legislator to keep up the pace of political and civic change.

5. The fourth lesson from history: The government does not necessarily want law to be made accessible through new technology

New communication technology is in Norwegian legal history applied by the government to produce law, and not to make law accessible. Even though there is no tradition for governing by secret laws, it has been very much up to the inhabitants themselves to find the law. This is, however, maybe the least true for the 13th and 14th centuries. The Code of 1274 is preserved in 35 complete manuscripts, and about 50 unique manuscript

50 Sunde 2023 1000-år , pp. 243-245.
51 Nadim, pp. 452-453.

fragments, from 1300-1350.[52] It is usual to reckon that 10 percent of a medieval manuscript is preserved today. Let us imagine that 20 percent of the original manuscript containing the Code of 1274 is preserved. In that case, there has been one manuscript of the Code per 1200 inhabitants in 1350.[53] Of the preserved manuscripts only two are decorated.[54] The rest of the manuscripts are plain, user manuscripts. This might indicate that the Norwegian king took an interest in having cheap manuscripts produced to make the law known around the realm. This becomes more likely when we see that some of the royal decrees from this period are found in a surprising amount of manuscripts. An example is a ruling by King Håkon V., son of King Magnus the Lawmender, who clarified a provision in the Code in 1318. It is preserved in 38 manuscripts,[55] suggesting a spread in the Middle Ages of between 200 and close to 400 copies.[56] This also indicates a royal desire to distribute law, but we cannot know for certain to what extent the Norwegian king took the initiative to have legislation copied, using the new communication technology.

A desire to make law known by using the new communication technology is at least partly present in the 17th century. As we have seen, statues issued by the Danish-Norwegian king were to a low degree printed. However, the Code of 1274 was printed in 1604 on the king's initiative, and a collection of statutes was printed in 1643. The only example of governance through secret legislation is, when the Lex Regia, a constitution for the absolute Danish-Norwegian monarchy from 1665, was not made publicly known before 1670, and printed in 1705. This is the exception in a period when the Code of 1687 is printed, and so are all statutes and decrees. However, no new edition of the Code of 1687 was printed as part of the royal's initiative, and no compilation of the thousands of statutes and decrees was put together. When a statute changed the Code of 1687, there were hence no editions of the Code reflecting the change. And when a statute was abandoned and a new one issued, they both existed in an equally authoritative

52 Rindal, p. 50.
53 Presupposing 500 000 inhabitants in the Norwegian realm, which is the highest possible number.
54 Codex Hardenbergianus at the Royal Library in Copenhangen, Denmark, and Codex Reenhielmianus in the University Library in Lund, Sweden.
55 Storm, pp. 393, 396, 412, 419, 429, 436, 438, 443, 456, 472, 481, 494, 519, 533, 537, 558, 560, 573, 598, 600, 648, 649, 649, 658, 670, 674, 702, 705, 710, 712, 716, 726, 733, 736, 752, 761, 777 and 788.
56 Depending on if we presume it is preserved 10 and 20 pro cent of the original amount of copies.

and printed version, and it would be left to the inhabitants to decide what was the relationship between them.

The Danish-Norwegian king in the 17th and 18th centuries governed by printed law, but after the first print, it was left to private entrepreneurs to spread the law in the realm. This was the policy of the absolute monarch, and it would later be the policy of constitutional Norway after 1814. Because the Norwegian parliament also took no responsibility for distributing law beyond the first print. In 1859 it was two newly graduated law students who, to help other students, collected the articles in the Code of 1687 and statutes supplementing the old Code of law, in a compilation. It was a purely private compilation but would be the collection of Norwegian law that was applied in ministries, courts, law firms, by law students, and found in public libraries. The Norwegian government published a yearly gazette from 1877 with all new legislation, but it was so hard to access that many lawyers over the years graduated without even knowing of its existence.

In 1981 *Lovdata* was established as a Norwegian, legal, digital platform. The Norwegian government was a stakeholder in the process, but the platform is owned by a private foundation, and run without public subsidies. From 2001 the law gazette from 1877 was published at the platform on a commission, and, together with other major legal sources, freely available to the public. However, the legal platform is financed by a large amount of legal sources only accessible behind a paywall. New communication technology in the 20th and 21st centuries did hence not change the long practice of publishing law but leaving it to private entrepreneurs to continue the publishing.

6. The fifth lesson learned from history: The same technology used to produce law must be applied to make law accessible

From what is said above, we can conclude that despite the Norwegian government not having taken a general responsibility throughout history for communicating the content of the law, it has not governed by secret laws. Firstly, because new legislation has been made publicly known. Secondly, because private entrepreneurs have been given the permission to use the new communication technology to make the law more easily accessible.

During the Middle Ages, this was done by inserting textual features. In the 35 preserved manuscripts of the Code of 1274, we find the use of headlines of about 220 chapters to make it easier for the reader to navigate more quickly through the text. Every chapter is also given a capital letter with a different colour than the rest of the text for the same reason. In the text itself, the scribe could draw hands with a finger pointing at the crucial part of a provision or a central word. The same could be underlined later by a reader, who also could write comments in the margins of the text to increase the readers' understanding of the text.

Also today, the use of this kind of textual features are well known to readers of legal texts. However, this take on the problem of access to law when the amount of laws increased did not solve the problem after the law was printed in the 17th and 18th centuries. Instead, different kinds of printed indexes became the tool to secure actual access to law. It started already in the 16th century with handwritten glossaries with explanations of terminology, and with references to the provisions in the Code the terms appeared in. An example is a glossary by Morten Nilsson, city judge in Bergen 1588-1590 and later appeal court judge in Stavanger 1590-1601.[57] He also had a manuscript of the Code of 1274, a collection of additional legislation, and a collection of court rulings, indicating his desire to access law by sorting the legal material in different manuscripts. However, what was really helpful, was the printed index-books that started in 1743 with a 912 pages long volume with the title *Alphabetisk register over Danske og Norske Lov hvortil er føyed lovenes articulers loca paralela, samt dertil allegeret Konge-loven, Kirke-ritualet, alle kongelige octroyer og fundatzer, samt forordninger som ere udgivne baade før og efter lovenes publication, alt til 1740 aars udgang.* In this book city judge Otto Jacobsen Bull listed legal terms alphabetically, and linked them to the article in the Code of 1687, and later legislation. For instance, murder would be linked to article 6-6-1 in the Code on second-degree murder, to a statute from 1697 and one from 1749 on first-degree murder, and finally to a statute from 1767 on murder committed by a suicidal to obtain a death sentence, called melancholy murder. The edition from 1781, published by Laurits Fogtman, was in three volumes and on 4560 pages – the legislation craze would never

[57] *En Dombog med adskillige norske Domme fra det XVI Sec., Bergens Sager især angaaende*; https://media.digitalarkivet.no/view/38912/1 <opened 23. May 2024>

end, and printed volumes with indexes became the solution to the problem of accessing the huge mass of law.

In Norway, indexing is even today the solution to access large amounts of law, even after the legislation craze caused by the digitalization of law. The reason is that the legal digital platform *Lovdata* is still paper on screen. That means that when you search for e.g. "co-habitation" on the free online version, you get about 13 500 hits. Of these are 54 statutes, 167 administrative decrees, about 8 250 ordinary court rulings, and about 3400 rulings from the National Insurance Court,[58] just to mention the most central legal sources. If you search in the version of the legal digital platform behind a paywall, you get about 29 500 hits. All listed according to the type of legal source, and then chronologically, alphabetically, or according to a very undefined and not precise relevance criterion. The technique is very much the same as used in printed books since 1743, which is no longer of much help when the legal material is this large. Instead, you find a different technique applied to digital platforms like VLex,[59] WestLaw,[60] Lexis Nexis,[61] and PKU-Law.[62] The benefit of a legal platform will in the future be that you go beyond indexing by searching keywords, but instead go in a dialogue with the machine, telling your story, and hence conducting a contextual search, like on ChatGPT. The findings will not be listed, but presented as a mind map, linking the legal sources together. Finally, the result of the search can lastly be tested in a mute court to see if there are any flaws in the process.

7. Conclusion

Norwegian society, politics and law are very different today from previous centuries. For instance, everything from the complexity of legal regulation to the size of public administration, and on to legal terminology is different. However, there are similarities in the response to law being communicated by using new and more efficient and far-reaching technology in the 11th and 12th centuries, the 17th and 18th centuries, and the contemporary

58 Sunde 2023 1000-år, p. 252.
59 https://vlex.com/ <opened 7 May 2024>
60 https://legal.thomsonreuters.com/en/westlaw <opened 7 May 2024>
61 https://www.lexisnexis.com/en-us/gateway.page <opened 7 May>
62 https://www.pkulaw.com/ <opened 7 May 2024>

situation. All the five lessons we can derive from Norwegian history have relevance for the contemporary legal situation in Norway today. Law has already changed because of a series of factors of change interacting with new communication technology, transforming printed law into digital law. The change has caused the same legislation craze as when written law replaced oral law, and printed law replaced written law. However, the change is yet not over. The last phase is crucial for the future of the rule of law, since in the last phase will the accessibility of law be decided. Only when law is accessible is there a rule of law. This can first be achieved when the same technology that makes the production and communication of law more easy and effective, is also applied to make the law accessible. Can the government rely on private entrepreneurs bailing it out again, or should the government take action and support the development of digital tools that can support human decision-makers by sorting laws? In Norway we will start the legal training of the first Norwegian language model in the fall of 2024. This might be the beginning of the end of the third period of large change in Norwegian law that can be linked to new communication technology.

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Laudatio Caroline Braet

Ann Buysse

This morning, as I read the news, I came across an article where three renowned professors shared tips for students. In the accompanying photo, I see Professor Dr. Caroline Braet standing alongside colleagues Ignace Glorieux and Geert Molenberghs. Reading the article, I couldn't help but think that it beautifully summarized what Caroline Braet represents for the faculty and the students. Indeed, she is a well-known professor, and in the photo, she is flanked by male colleagues. Throughout her career, she has often been the only female professor, yet she has taken on many responsibilities. In the article, she describes herself as a disciplined, hardworking colleague, working from 8:00 in the morning until 9:00 in the evening, maintaining regularity, healthy eating habits, and sufficient exercise. Perhaps most importantly, Caroline shows a strong concern for the students.

Caroline Braet has shaped and established both education and research in clinical developmental psychology at Ghent University during her long and fruitful career.

- Master degree in Psychology (Clinical Psychology) obtained in 1984 (Ghent University)
- Teacher training obtained in 1985 (Ghent University)
- Postgraduate in Cognitive Behavioral Therapy (1987-1990) (Ghent University)
- PhD titled: 'Psychological aspects of childhood obesity' obtained in 1993 (Ghent University)
- Professor in Clinical Developmental Psychology (since 1997, and since 2012, full professor.

I have had the privilege of working with Caroline for several years in her role as departmental chair and within the Federal Council for Mental Health Professions. In both roles, she has consistently shown great dedication and advocated for the recognition of psychologists.

Professors are typically evaluated in HR committees based on three types of performance: research, teaching, and service. Let us examine Caroline's merits in these aspects. Now, as we gather here in the context of the Sarton Medal, we can only conclude that Caroline has excelled in all aspects, making her a well-deserved laureate.

Let me first talk about research. It wasn't until the chair of clinical developmental psychology was assigned to Professor Caroline Braet in 1997 that the field began to flourish. In the field of clinical developmental psychology, Caroline is particularly known for her research on childhood obesity, specifically transdiagnostic mechanisms such as emotion regulation. A better understanding of such mechanisms is crucial for understanding and treating psychological problems in children and adolescents. Throughout her research career, she has collaborated with renowned researchers nationally and internationally. She coordinated the SBO project 'Reward', a collaboration between the Ghent Faculties of Psychology, Bioengineering, Medicine and Health Sciences, and the School of Mass Communication of KULeuven. Internationally, she collaborated with experts in the USA, Australia, UK, Netherlands, Austria, and Germany and was appointed an honorary member of several international associations, including the Dutch Association for Behavior Therapists.

Within the Department of Developmental, Personality, and Social Psychology, Caroline has built the Clinical Developmental Psychology research group over 25 years. The section currently consists of an excellent team of no less than 25 staff members, including fellow professors, postdoctoral researchers, doctoral students, educational supervisors, and practice assistants. Under her supervision, 25 doctoral theses have been successfully completed, and many of her doctoral students have found their way to other higher education institutions or to clinical practice. Caroline's research output in the Web of Science currently stands at 239 publications; she has an h-index of 45, and her work has been cited over 6700 times.

Education: Caroline has also contributed to education. Since 1984, Caroline has been involved in teaching within the Psychology program at our

faculty. During her career at Ghent University, she has been responsible for teaching various courses: Clinical Developmental Psychology, Developmental Psychotherapy, Integration Models in Clinical Psychology, and Master's Internships in Clinical Psychology. Under her supervision, hundreds of students have written their master's theses. She has also played a role in three program reforms within clinical psychology. Additionally, she has been involved as a coordinator in various postgraduate programs, including Behavior Therapy for Children and Adolescents and Clinical Psychodiagnostics for Children.

Scientific and Societal Service: Caroline is not just an academic who confines herself to her ivory tower but has always had a keen eye for the clinical field. Over the years, active collaborations and support have been established with the clinical field. Caroline has extensive experience in disseminating and valorizing research results: She has been a member of networks/associations of clinical psychologists such as the Professional Association for Clinical Psychologists (VVKP) and the Flemish Association for Behavioral Therapy (VVGT) for over 30 years. She serves as an expert in various advisory groups with policymakers (e.g., 20 years on the board of Eetexpert). She has participated in numerous media interviews and has been involved in the development of more than 10 webinars. Caroline has presented her research at more than 90 national congresses and has presented at over 100 international congresses. Many of these presentations were keynotes, and she often chaired symposia. Furthermore, she has been involved as a reviewer and editor for various international, scientific journals and has served on the jury of more than 150 doctoral theses.

Furthermore, for a decade, Prof. Caroline Braet led the Department of Developmental, Personality, and Social Psychology (2011-2022). Today, Caroline is awarded the Sarton Medal for her contributions to the history of the field of Clinical Developmental Psychology. Before concluding, I would like to highlight three particular merits that clearly demonstrate why Caroline, as a true scientist-practitioner, deserves this medal.

First, throughout her career, year after year, she has dedicated herself to building a high-quality clinical internship for master's students. To achieve this, she led a team of experienced clinical assistants, prioritizing the care of students taking their first steps in the clinical field. Additionally, she and her team continuously worked to maintain good relations with all partners in the clinical field. Caroline tackled this educational feat with great dedi-

cation and enthusiasm, making a significant contribution to the education and graduation of hundreds of competent clinical psychologists.

A second noteworthy achievement is the establishment of the Center for Child & Adolescent. For those unaware, the Center for Child & Adolescent is a university psychological center for children and young people founded in 1992 by Prof. Leni Verhofstadt-Denève, who entrusted operational leadership to Caroline. Over the years, Caroline coordinated the center's exponential growth in staff and forged various structural partnerships with institutions such as UZ Gent, AZ Jan Palfijn Hospital, the study advisory service, and UCare at UGent. Furthermore, Caroline ensured that values such as evidence-based work, training of interns, and evaluation of treatments remain central pillars of the center's operation today. Thanks to Caroline, the center now guarantees quality treatment for children and young people facing difficulties.

Lastly, in terms of research, I want to highlight Caroline's internationally renowned expertise in childhood obesity. What began nearly 30 years ago with her clinical work in the pediatrics department at UZ Gent with obese children, followed by her own doctoral research, has led to various multidisciplinary and European projects on understanding and treating obesity in children. Dozens of scientific publications have stemmed from this work, practical protocols have been developed for treating overweight children, and research findings have been disseminated through numerous contributions to international conferences. A fantastic culmination of this will undoubtedly be the European Childhood Obesity Group (ECOG) conference, with Caroline as the central host in October 2024 in Ghent.

Caroline, of all the remarkable accomplishments you have achieved throughout your career, only a few have been highlighted here. Congratulations on receiving your Sarton Medal.

40 years Developmental Psychopathology: Reflections on the past, the present and the future

Caroline Braet

The Domain of **Developmental Psychopathology** is a relative young field within Psychology; worldwide this started about 40 years ago and also at Ghent University we can look back on 40 years of Developmental Psychopathology. I am the proud witness of this, or should we say, the inspirer, or perhaps rather the captain of a beautiful boat? I would like to make a personal reflection on the past, the present and the future of this domain, starting from my unique position at Ghent University and always driven by the clinical perspective. To do this, I have divided my reflections into four time zones, each of which spans about 10 years.

The eighties

The Faculty building 'Psychology and Pedagogical Sciences' was inaugurated in 1980. I was there as a student and we were the very first following courses in Clinical Psychology in this brand new building.

Even as a student I was struck by the enthusiasm of Developmental Psychology professor Leni Verhofstadt-Deneve and the scientific expertise of Personality Psychology professor Ivan Mervielde; I was surrounded by people who inspired me on a daily basis.

At that time, the concept "Developmental Psychopathology" was not yet born, although the concern was growing that some children do not show a normal development. Under the guidance of Prof. Nady Van Broeck I fol-

lowed "case studies on children with psychological/psychosomatic complaints" and since there were only 7 students who followed this course (can you imagine, now there are more than 400 students for such a course) we were also allowed to attend consultations at the Ghent University Hospital, in the Pediatric Clinic, on Wednesdays. We were challenged to think about why children had complaints that could not be explained medically and even more challenging: we thought about how we could reduce those complaints.

Here I was surrounded by fine pediatricians, including Myriam Van Winckel with whom I would build the longest collaboration ever. We both 'dive' into the field of childhood obesity and try to approach the problem from different angles, including the clinical psychology; let 's say: a Developmental Psychopathology perspective 'avant la lettre'. I was lucky to get a job there, it was a unique opportunity to continue working on childhood problems after my studies, and it results in 20 years of part-time consultancy in the Pediatric Clinic, which gave me also the opportunity to start research on this topic under the supervision of the professors I looked up to so much as a student.

How to define research questions for problems where this is no research tradition yet? For those children who ate too much or too little, the environment plays an important role, the question was: how to analyse the problem in a behavioral context in a systematic way? I followed two postgraduate trainings: one in Developmental Psychology and one in Behavioral Therapy (for adults) during these eighties. Thanks to Prof. Paulette Van Oost, inspirer of the Behavioral Therapy courses, I learned to observe in a systematic way: analyzing the hours before the problem arises and also what follows afterwards. We learned about coercive behavior. In US, these problems were recognized in children and the problems could be decreased by applying Behaviour Therapy, for example, we learned to apply 'mediation', in which the parents are very systematically involved; which is easier said than done; but nonetheless for some children highly needed, an approach that is still useful today, just think of the advice within the CKGs and the numerous 'opvoedingswinkels' in Flanders (see De Mey, 2010).

To date, meta-analyses show that the Behavior Therapy approach for coercive behaviour is still highly effective, with effect sizes above 1 (Weisz, et al., 2017, 2019); an approach that several of us adopted for different problems in children (sleeping problems, encopresis, obesity) whereby Wim De

Mey (see De Mey, 2010) applied and refined his approach in his PhD to children with behavioural problems. Of note, unfortunately, for these problems also medication (e.g. sleep medication) was often prescribed, while there is much more evidence that such complaints can be solved through an expert applying Behavior Therapy.

To conclude my reflection on the first decade, in short: the very beginning of the research on psychopathology in children in Ghent was making systematic analyses of behaviour of children; and fully relying on the role of the parents in their upbringing. This lead to mediation training programs which were also evaluated and this offers contributions to the scientific world. We must acknowledge that psychology was then very much focused on the observable world, whereby great scholars (see for example Belsky, 1980 or Loeber, 1990) recognize other actors (beside the parents) and divided the observable world in macro, meso and micro levels, known as the ecological models, all needed to understand child psychopathology, for example for understanding conduct problems. However, even with broadening the environmental impact (the outside world); there was still too little attention on the children and young people themselves (inside world) (besides the psycho-analytic theory driven perspective). We wonder: (a) Why do children who's parents show well-evaluated parenting skills also have certain problems? (b) Why do some children have problems and others do not, despite all odds? For many problems, there were that time still no sufficiently clear answers.

The nineties

You expect young children to be happy, but that's not always the case. For children like Victor, who suffered from a depressed mood, at that time, we had no clear answers. Depression was even not recognized till the eighties so there was no research at all. This was so close to my heart that it became my second field of study.

Victor

A mother enrolls her 10-year-old son Victor in an outpatient therapeutic center referred by the school. On the phone, mother mentions that Victor has social problems. He is regularly bullied. A lot of attention is paid to bullying at school, but this has not yet provided a solution for Victor. Because Victor never has the chance to be the boss at school, he plays the boss at home. This results in conflicts with his younger sister, where he feels like he is always the victim. According to his mother, Victor has little self-confidence, which is expressed, for example, in thoughts such as 'everyone is targeting me'. Mother strongly recognizes this negative self-image in herself and wants to prevent Victor from also suffering from this. However, when expressing too much empathy Victor misuses the situation, for example by insisting to stay with her in the evening, postponing bedtime. It results in conflicts when rules should be followed (for example stop watching TV), so now also problematic coercive behaviour occur; Victor does not want to listen anymore to her. Since he is in conflict everywhere, he became more and more isolated, so he now barely does anything.

Here, I was first of all challenged by the domain of personality psychology focusing on 'child characteristics'; more specific **observable differences in temperament**, leading to different personalities later in life. The temperamental differences could also explain why some children had more problems than others. For example, relying on the work of Caspi & Moffit (see Caspi et al., 1993) attention has been paid to differences in temperament in relation to psychopathology, an expertise strongly present in our department as well and often resulting in fascinating debates about the role of nature and nurture (for example: are these temperamental traits malleable or not?).

Although there are different temperamental typologies, I will choose here one that was really helpful for me. Apologies for the laymen for introducing you to the wonderful world of BIS&BAS (Gray, 1987). BIS&BAS are biologically anchored temperament traits. BIS refers to (among others) one's level of anxiety in new situations; BAS refers to (among others)

one's level of reward seeking. Each of us has some (or very much) BIS and some (or very much) BAS from birth, but there are many differences between children and some have more BIS or more BAS than the other. This way we can situate each child in this two-dimensional space. For example, children with obesity, like Peter (see Box Peter below) are often situated in the quadrant with high BAS (and regular BIS) and children like Victor (see Box Victor supra) are often situated in the quadrant with high BIS (and normal BAS). It soon became clear that these children had to be treated differently. Differences between children mean that there was no single type of parenting model for parents: it was clear that parenting had to be adapted to the characteristics of the child.

Also for us, these insights initiates numerous studies developed in the 90's to study temperamental differences in children with problems (like obesity, depression) or, even more: studies that combined both research lines (the role of the environment/ parents and temperament), leading to a paradigm shift in approaching psychopathology: problems in children are better understandable when we approach them as the result of a 'miss fit or poorness of fit' (between the parents and child's temperament) and this also initiates a search to new tools to help these children.

Interesting, and important, this perspective includes the recognition of a developmental trajectory: A problem should be studied as the result of (child x parents) dynamics that have their origins in the past and deviated across a time course. This approach led to new questions: why are some problems persistent and others not (e.g. young children suffer from phobia for the dark); why are some children deviating and others not?; why are dynamics of the past still alive (e.g. attachment problems)?. This has led to new studies and has 'fed' our thoughts to construct new models. This new way of thinking was situated in an international context; the world of studying developmental trajectories (see also Loeber & Farrington, 1994); the world of 'Developmental Psychopathology' came up. I would like to mention here a great man on the international scene: Dante Cichetti who in 1989 (35 years ago seems like a long time but is short for a new domain) founded a journal 'Development and Psychopathology' through which we could share our research in the field of Developmental Psychopathology with each other.

What is Developmental Psychopathology? As Cicchetti says 'we had to be concerned with the origins and time course of a given disorder, its varying manifestations with development, its precursors and sequelae, its evolutions in the future '(Cicchetti, 1989). We will consider problems and disorders of children in a developmental perspective rather than in terms of psychiatric syndromes. This is summarized in a definition: 'It is a general approach to understanding relations between development and its maladaptive deviations' (Achenbach, 1990).

I am very grateful to the Colleagues Professors Pier Prins, Joop Bosch, and later Marcel Van Aken and Patricia Bijttebier who encouraged me to contribute also to theory-based publications in textbooks on Developmental Psychopathology, and invite others to do the same by editing books and special issues in distinguished journals specifically dedicated at the new domain: Developmental Psychopathology, as well as with Leni Verhofstadt-Deneve the ever-driving force to anchor Developmental Psychopathology in Ghent once and for all (see for example: Braet & Verhofstadt (1998); Braet & Van Aken (2006); Braet, Prins, & Bijttebier (2014)). Since that time, early 90's, research in Developmental Psychopathology has begun to boom, thanks in part to Dante Cichetti and other prominent people. Numerous experts came in the nineties to Ghent (for example R. Loeber, A. Masten, A. Caspi, T. Moffit). I want to mention two other renowned colleagues who were in Ghent in the nineties, with whom we had fascinating discussions, they led summer schools in our University and thus gave our research a boost.

Developmental Psychopathology could rely on important earlier work conducted by the psychiatrist Michael Rutter. He was the first to conduct epidemiological research but he realized that a longitudinal perspective was needed. He wonder: 'how many children are there with psychopathology? And, even more important: are these problems faded away or not?' Later on, he put his studies (known as the 'Isle of Wight' studies) in the framework of Developmental Psychopathology.

Isle of Wight studies: the British psychiatrist Michael Rutter carried out research on the Isle of Wight (Rutter, Tizard and Whitmore, 1970). There they tested all the children between 9 and 11 years (in all, 3500 children) and followed them 5 years until they were between 14 and 16 years. In a first stage, Rutter used the 'Questionnaire for Teachers' and the 'Children's Behaviour Questionnaire for Parents' (Rutter, Tizard and Whitmore, 1970). Both questionnaires focus on 'problematic behaviour'. If the children had a score higher than a 'critical score', they were put in a 'clinical' group for further study in a second stage. This applied to 13% of the 9 to 11 years old children. Next, Rutter did some further analysis and found a really problematic group of 6.8%, including depression, anxiety disorders, obsession, tics, conduct and emotional disorders. In doing so, Rutter obtained for the very first time valuable information on the prevalence and evolution of child psychopathology. It turned out that these problems were very persistent over the years. Later, Rutter's research group did the same study in London's inner city (Rutter, Cox, Tupling, Berger and Yule, 1974). Again, all the children (N = 1689) were tested and followed for several years (from 10 until 18 years). Here, the prevalence of psychopathology in the first stage was about 25.4%, which is enormous (and far more than the prevalence rate on the Isle of Wight). Till now, different explanations are put forward like: children in an urban environment live much closer together, have less room for free playing and are more likely to come in touch with criminality. It is also possible that the parents of urban children constitute a special group, or that they lead more stressful lives and have less time available for their children.

I would also like to mention here Thomas Achenbach. T. Achenbach is also a key person in the history of Developmental Psychopathology, as he developed an important and above all valid and reliable measuring instrument (the CBCL, see Achenbach & Edelbrock, 1983) to assess the severity of psychopathology in youth, which we brought to Flanders and this CBCL is still used by many colleagues in the sector today. There were almost no measuring instruments available at that time. This hampered the

research progress. For this we had to dig out (often in the US) for instruments that were valid and reliable and translate them and most of all to transcend the problems of subjective reports by relying on multi-method multi-informant measures (see for ex. Lewis & Miller, 1990). Here I want to thank to numerous colleagues at Ghent University as well as many PhD students: thank to their efforts we have now many good instruments with Ghent authors.

We need the instruments for our research, but there were no standards, no cut-offs, no data on validity, reliability, factor structure, etc. It would be more than deserved that we project all the efforts made; if only out of respect for the hours spent working on this together. It now seems obvious that we pick measuring instruments from the internet, at that time research was really slow. I want to sketch the research in all domains, also the Developmental Psychopathology domain in the early 90's with one metaphor: imagine an old library, full of books, till the ceiling. As there were no computers, research was totally dependent from such libraries, often spread over different faculties. Also in Ghent I often have to crawl on ladders to be able to consult one study in one book.

Although ecological/environmental models and 'miss fit' models had great historical value, they were often seen as passive, as to linear, suggesting one cause with psychopathology as the inevitable outcome. Therefore, based on experience, on clinical insights but also relying on advanced statistics, we noticed in the 90's a transition towards so called 'transactional models' whereby the old linear models were still acknowledged as important but, they were transformed in 'circular models', by adding arrows that suggest circularity and bidirectional influences. In this framework, It gave birth to my PhD (in 1993) (parallel to the birth of my own children). In this PhD, I was able to bring a first, nice and profound application of Developmental Psychopathology to a big eating problem. Relying on the instruments we collected, I conducted five studies that enabled us to construct our own obesity model (see figure 1). Obesity is a complex, multifactorial problem, preferable depicted in an ecological transactional model (O'Brien et al., 2007). Through such integrative images illustrated here in Box 'Peter', we point to the modifiable mechanisms (the role of the outside world, e.g. parenting situated in a macro environment as well as the role of child characteristics, which can lead to emotional eating or external eating, depending on temperamental traits) but still relying on the 'miss fit' hypothesis. Every child with overweight is different but, nevertheless, the

environment/family will always play a role and this interacts with specific child characteristics. This is till now also explained this way to parents of a child with obesity (see for ex. Braet, 2005).

Peter. Peter, 11 years has overweight. He was always excited to eat. As early as 10 o'clock in the morning, he goes into the cupboard looking for a tasty snack and asks his mother what she will make for lunch. As soon as she starts in the kitchen, he comes to assist her. As long as there are leftovers, Peter will ask for food again and again. At home, there are no problems; Peter is a happy child. As he is the only child, parents have a pleasant time with him and they like the evenings all together cozy on the couch with some snacks. He is liked, even by his grandparents. They like to spoil him and Peter is so enthusiastic about grandma's treats that she has started to do her best even more with offering each day a surprise like homemade cake, baking pancakes etc. Peter knows that and likes to visit them every day after school.

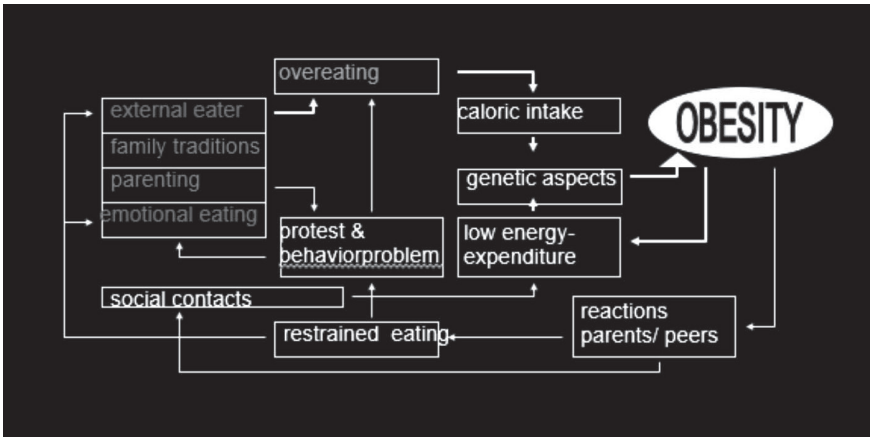

Figure 1 'working model to understand development of OBESITY in children'

Yet in the early 90's, education on in Flanders on Developmental Psychopathology was also still in its infancy. My possibilities to change this were fully activated first as postdoc but even more in 1997 when I got the chair 'Developmental Psychopathology' and in addition to a course, research boomed, thanks to the technical support that came up: our own PC, internet connection, an email address, overhead projector, etc. Related to the chair, the new course received a new name: 'Clinical Developmental Psychology', which became known by the abbreviation KLOP (which is broader than Developmental Psychopathology as it also looks to the clinical implications). Later, more courses were added, currently we are responsible for 10 courses and two postgraduates in Ghent.

In these courses, the models we developed for different problems in childhood, comparable to the obesity model, often driven by research, were used for teaching case conceptualizations: students learn how to adopt these models for one specific child, with specific child characteristics, growing up in a specific family environment; all should be taken into account when problems came up. They learn to adopt the model for example for different cases, like a child with sleeping problems, a child who suffered from a severe tic syndrome, etc. Attention will always be paid to assess the role of the environment/family and of course to specific child characteristics. Then, the transactional model will be constructed, e.g. an integrative image consisting of several 'miss fit' hypotheses tested for each individual child with a specific problem, all measured through systematic observation as well as with valid instruments. On top, we surfed on the new wave developing appropriate treatment protocols for these children, derived on the integrative images, that were well evaluated, which we then further developed in courses such as Developmental Psychotherapy.

On the edge of the 2000s

In the year 2000, for Developmental Psychopathology in Ghent, 20 years have passed, 20 years had yet to come. Once you are a professor, you can apply for own funding and lead your own PhDs, ideal if you want to contribute to the international forum for Developmental Psychopathology. The first PhD started in 1999. However, at that time, we were not always that successful in acquiring grants. We were often disappointed that the re-

viewers didn't believe in our projects. Specifically funding for longitudinal studies was hard to get.

> *Longitudinal studies: Developmental psychopathology relies on longitudinal studies. Within the longitudinal approach, there are several traditions of research in developmental psychopathology, which can be used separately or in combination. The more common of these are: longitudinal studies of specific risk groups or of population groups as a whole. The longitudinal approach to risk groups also includes, in addition to follow-up studies, follow-back studies, in which risk variables and disorder mechanisms are reconstructed in retrospect instead of prospectively. We also find that the study of risk groups has led to a new object of study, viz. development trajectories. Both risk factors (differentiated from covariates) and protective factors were taken into account. Longitudinal studies are usually contrasted with cross-sectional studies. Although cross-sectional studies can be conducted repeatedly with different samples at different times, the subjects who are the focus of such studies are different, and therefore these studies are not longitudinal by our definition.*

Nevertheless, since then I have been the proud supervisor of many researchers who gave the best of themselves to grasp what problems in children entail and especially how you should treat them. The model of my PhD may have been a working model; the many assumptions were often question marks that we articulate as 'hypothesis' and this was tested several times (there were more than 15 PhDs in Ghent on the problem of obesity the past 20 years); with particular attention to the role of the parents, the role of temperament and other child characteristics, as well as their interaction (see f.ex. the fruitful great efforts of Goossens (2009, 2012); Verbeken (2012) and Moens (2008) with whom I have respectively 57, 50 and 33 co-authored papers). Just as many times we were surprised by the findings, which in turn led to new research. I once again express deep respect for these PhD students for the hours we spent working on this together.

As a consequence, over the past 20 years, our lab at Ghent University has grown from a one-(wo)man business to a team in which now 30 colleagues

are currently active. Colleague professors came, who in turn attract new funding and researchers. Each of them has contributed to the domain of Developmental Psychopathology, laid a brick (and not always in easy circumstances) that others have been able to build upon.

We all feel the need for integrating our findings in a way that approaching psychopathology is not possible without a good model. We incorporated what we learned in the 80's and 90's which had led to the 'miss fit' models and the ecological transactional models but, year after year the models now were adapted and refined. Actually, an interesting line of research emerged including the study of the internal world of children. Since I attended the World Congress on Cognitive Therapy, a fascinating conference that opens new perspectives on psychopathology, we were encouraged to test the new insights (so far mainly studied in adults) in children, and dedicated many hours in figuring out how to assess (and treat) the internal world of children (till then this was the domain of psychoanalytic people) now by studying in an objective scientifically sound method the cognitive vulnerabilities of a child; under the motto 'what you think, determines what you feel, and what you do'. This was certainly a milestone for Developmental Psychopathology (Hankin & Abela, 2005) also for Ghent, thanks to the great efforts of Timbremont (2004), Van Vlierberghe (2010) & Wante (2017).

Cognitive vulnerabilities. How do you think a child feels when they get a glass with a nice drink in it but the glass is half filled? Is the glass (half) full or (half) empty? The way you look at the world can be compared with colored glasses (pink or dark). Some of them only see the bright side, others see only the dark side. Triggering one's 'dark side' can make children vulnerable in the way they are processing experiences in a biased way (only the dark details and no others details were seen), affecting their cognitive functions like attentional processes, their interpretation and even their cognitive memory of experiences, which is unfortunately related with a shower of negative emotions. This is how cognitive factors in a simplistic way looks like an can have great impact on someone's live.

Consequently, in our model construction, the child's internal world could now be recognized and was given a central role in the development of psychopathology under the name 'diathesis'. Diathesis is not the same as child's temperamental characteristics that act 'as a trait' but a diathesis is considered a vulnerability. I have to mention that we choose to focus on cognitive vulnerability but other groups have other interpretation of the diathesis (for example biological vulnerability). I refer here with great pleasure to the many studies conducted in Ghent but also all over the world to understand how this cognitive vulnerability in children operates as a diathesis (as a moderator instead of a mediator) and, even more challenging how cognitive vulnerability develops, whereby the attachment relation was seen as a very important precursor, resulting in 'cognitive schema's'; reflected in the work of Guy Bosmans (let's say: his master piece) (Bosmans, 2009).

Based on international insights (see for ex. Hankin & Abela, 2005), our group started then with creating its own model. Integrating the 'ecological/environmental' models, the 'miss fit' model with the 'diathesis' assumption in one integrative image, useful for case conceptualization for every child suffering from psychopathology but also very relevant as working model for research purposes. Cognitive vulnerability was given a central role as a diathesis. Interesting this vulnerability factor was seen as a 'scar', and sometimes 'sleeping'. Therefore it is still important to look to the origins of the scars and even more, the factors that can trigger the latent scars to became active. Earlier we talked about the role of the environment and the role of temperament in understanding symptoms. As they both can contribute to symptoms of problems in children they still have a unique role in the model both directly related to the symptoms but also indirectly, as they were often seen as intertwined with the development of scars.

It must be said that there is never one cause for a problem. In Developmental Psychopathology we speak of transactional models and consequently the model needs mutual arrows (see figure 2). Finally, the model also recognizes an important role for the impact of 'stressors'. Therefore, at the top of the model we add the factor 'stress' in the model and give the model the label 'the diathesis-stress model'

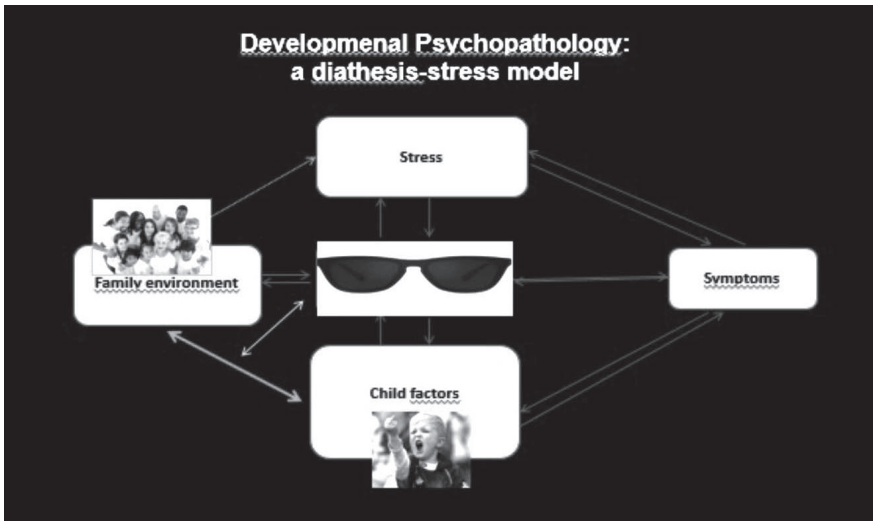

Figure 2: 'the Ghent model in understanding the development of psychopathology during 2000-2010'

In psychopathology, decades of study were published on the role of stressors, adversities and trauma's that can have a direct effect on the development of psychopathology. It is an amazing line of research, specifically when it was conducted in specific groups of for example children with traumatic experiences or children who grew up in circumstances with many adversities or, more recently, youth during the isolated weeks due to Covid. However, here we have to differentiate between its main effects and its indirect effects. Not every child under stress gets complaints or the same complaints. Therefore, the model relies on the hypothesis that it is the interaction between stress and the diathesis, here the cognitive vulnerability of a specific child, that leads to the symptoms. But, the model contains also other 'actors and variables'. Of course, we still look at the parents as central care figures and we still acknowledge the role of child factors, such as temperament and self-image. In this way, we arrived at a (first) integrated figure that today is still taught in education here at Ghent University within our courses. This model has led to series of studies and doctorates: every aspect, every arrow included had to be evidence-based; deliberated and weighed. As we could not cover all problems in children, we mainly focused (in our research) on testing the model in relation to depression and eating problems.

Research is teamwork. You need a good lab but, you also need to be embedded in a great network of national and international researchers surfing on the same research pathways, facing the same 'struggles'. Here, the FWO-WOG, for more than 20 years the Scientific Research Community of which I am a part, is a high-level forum to test ideas, and where we are welcomed every year at a three-day meeting in Leuven, led by inspirer Patricia Bijttebier; which functions as a think tank, as a 'mirror', as a critical eye and this has definitely reshaped our own model-thinking and even more, the WOG was inspiring in developing designs and methods. I remember the debates on the role of vulnerabilities, stipulated as the differential susceptibility hypothesis (and its variants, like the vantage sensitivity hypothesis), on the methodological reflections on three-way-interactions when different temperamental characteristics should be taken into account simultaneously, how to understand comorbidity (Hankin et al., 2016) and I still think back to one of our legendary publications in 2003 on cognitive information processing biases when we worked on a special issue for the Journal of Clinical Child Psychology (Bijttebier, Braet, & Vasey, 2003).

From 2010 onwards

Developmental Psychopathology relies on longitudinal research, so if you can test models longitudinal the evidence is better than if the studies were cross-sectional, but this requires a lot of money, which is not easy to achieve in Flanders, and besides, you also need a lot of efforts (man hours). Thanks to 600 students in the third bachelor's program in psychology, the doctoral project of Marie-Lotte Van Beveren (Van Beveren, 2020), the efforts of many people, including my young colleague Prof Lien Goossens who joined us, as well as an amazing collaboration with the city of Deinze, we were able to test 3000 young people representing one community and follow approximately 300 of them (including their families) from 2014 to 2020 over the years. In doing so, we made great steps in testing our models but even more, by adding a new construct that makes our model even more comprehensive: the child factor 'emotion regulation' (see figure 3) (see also Braet et al., 2014; 2022).

Emotion regulation pops up also internationally, based on some great studies (see Aldao, et al., 2016) in adults and later also in children. In our groups we aimed to found out if (a) emotion regulation strategies are related with a child's temperament (b) processing the regulation of emotions can explain why cognitive vulnerabilities, once triggered (in real life are trough mood inductions) are sometimes better (or worse) handled (c) emotional processes are malleable, making it a very handy approach in treatment and (d) emotion regulation turned out to act as a transdiagnostic mechanism, relevant for understanding numerous problems of children.

Since that time, the domain of Developmental Psychopathology experienced a paradigm shift with the research switching its focus into the mechanisms underlying many problems, and inspired by a new framework: Research Domain Criteria (RDOC; Insel, et al., 2010) enabling researchers to focus no longer on separate problems but on underlying processes, also enabling us to understand comorbidity.

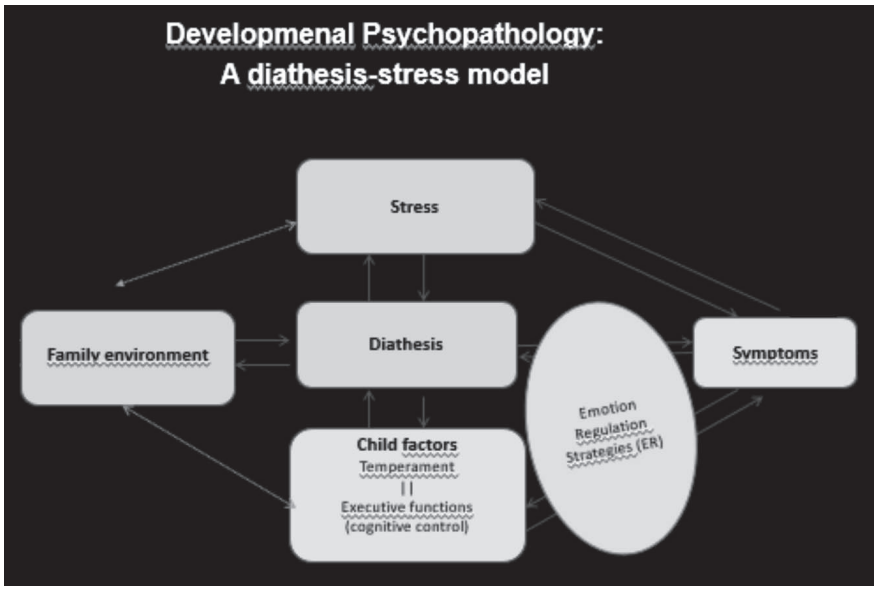

Figure 3: the Ghent model in understanding the development of psychopathology from 2010 onwards

I refer here also to the many studies on transdiagnostic mechanisms, also in Ghent, (and thanks to great fundings like BOF & FWO; the GOA, IOP and SBO, TBM) like the role of reward processes and (bad)executive functioning as transdiagnostic processes explaining many problems in children, tested again both in relation to depression and eating problems (specifically initiated in Ghent by Sandra Verbeken and Laura Wante who continued working on these mechanisms after their PhD; see Verbeken, 2012 & Wante, 2017). But, even more, our flagship arise: studies on the role of emotion regulation processes as transdiagnostic mechanism (with many, many researchers involved).

Research Domain Criteria (RDoC) framework (Insel, et al., 2010), aims to examine transdiagnostic dysfunctions across multiple levels of analysis (i.e., genes, molecules, physiological processes, self-reports etc.) in five functional domains (i.e., positive and negative valence systems, cognitive and arousal systems and social processes) representing psychological functioning.

Studies on emotion regulation are now still booming and continue to increase our understanding of emotion regulation and even more: the development of psychopathology. This enables us, the past 10-15 years to broaden our scope in many ways, For example, emotion regulation was no longer seen as the sum of adaptive strategies (or the result of maladaptive strategies) but it is now much broader (see Gratz & Roemer, 2004), whereby specific facilitating skills (like the role of emotional awareness or self-compassion) are an integral part of a good emotion regulation. We also tested its role in treatment, based on the model we learned from Matthias Berking (see: Braet & Berking, 2019). This has led to a new handbook on emotion regulation written by our team in which we integrate all the insights we gathered. Of note: the book it is currently under revision and this will led to a new version which will be launched in 2024. We now also broaden our scope to various target groups besides the study of depression and eating problems; we also studied emotion regulation in youth with addiction problems, conduct disorders, ADHD, anxiety problems and recently also burn out, including at-risk children. Thanks to FWO Red Noses funding, we are now also elaborating the path of the indicated prevention.

For too long, Developmental Psychopathology focused on specific disorders, although a multidimensional approach was recognized already for decades. We know now, more than ever, that early intervention can prevent a lot of suffering. We are surfing within Developmental Psychopathology on a research wave (a tsunami?) that can be expanded for at least another 10 years.

Clinical implications: are we able to apply what we preach?

Already in 1992 and driven by our mentor Leni Verhofstadt-Deneve, the therapy Center K&A (Child and Adolescent University Center) was founded in Ghent. Although initially we started with a small team (with Paul Hamers as one of the absolute pioneers), we already outgrown puberty and recently celebrated our 30th anniversary. Thanks in part to all the PhDs who worked in the center, there is now a team of 30 therapists where children and adolescents with problems as well as the parents of these young people are definitely in good hands. The therapists all use the model of case conceptualization (as depicted in the figures 1,2,3). Moreover, interventions focusing on affecting specific maladaptive (malleable)parts of the model were available and preferable those that were evidence-based were chosen, we insist on that, and we follow the international trends here, as confirmed in hopeful meta-analyses (see Weisz, et al., 2017, 2019): we can make it in helping children with numerous complaints on different dimensions of psychopathology. Partly thanks to the KLOP team, we made in Ghent our own Dutch versions and oh so many studies have been started in recent years and are ongoing into researching therapy effects. After all, the collaborations we initiated account for probably about 2000 authors from all over the world. Because yes, doing research is teamwork. As a result, there were now not only on tests but also manuals that we have produced resulting in >50 chapters in books (see for example Braet & Bögels, 2020), and thanks to an excellent collaboration with publishers such as Springer, Hogrefe and Boom, and the many Dutch Colleagues, of which I would like to mention the excellent cooperation with colleagues

from the Netherlands e.g. Pier Prins, Joop Bosch, Agnes Scholing and especially Susan Bögels. Books that reach many students (1000 every year) in our bachelor and master program at Ghent University on a daily basis. What's more, with which we have also been able to inspire many professionals in Flanders (and far beyond; e.g. The Netherlands).

The future of Developmental Psychopathology: some challenges

It has to be said, there are still many challenges that we are faced with in Developmental Psychopathology. I could mention countless of them, but I'll limit myself here to reflect on some major trends.

First, one of the challenges, which is now receiving particular attention from the FWO-WOG, is the **impact of the new environmental changes on young children and adolescents**. The world has changed so much in recent years. Let me give you some examples:

1. So much is expected of everyone, what new stress does this cause for young people, for their parents? Can parents still handle it themselves and still coach their children? What do we know about chronic stress and emotion co-regulation or emotional coaching (by parents or teachers)?
2. Many children now have two homes and parents are sometimes not there and sometimes they are, how safe does that feel? What does this mean for parenting? What are the financial implications of this? How much hidden poverty is there because of these life events?
3. Furthermore, the current generation is exposed to social media at a young age: world problems are now virtual reality, they become acquainted with aggressive games as well as an absurd ideal of beauty. What are the effects of these virtual worlds? We also know that bullying is now often online and has major consequences. How should we respond to this? Are young people struggling with their identity now more than ever?

4. Our environment also offers an over-supply of comfort foods, which are high in fat and sugar, hard to resist, at any time of the day, which is now certainly contributing to the obesity epidemic. At the moment, the discussion is ongoing to prescribe appetite suppressors as medication as a mean for weight loss; a debate that I follow very closely. However, it is also known that via the gut-brain axis, there can also be effects of comfort food on brain functioning. What does this do to young brains? Can we still turn the tide? And how?

Stress is on the rise... Symptoms too. How are we going to handle this? Perhaps more sociological research should be reached involving policy that stipulates guidelines on reducing stress for youth where possible (guidelines on social media for ex.)? Or do we need more studies on what are called protective factors that can enhance resilience and protect us? Or, do we need to learn to deal with it; by developing new trainings? How we can coach others in coping with intensified stress (by a 'zen' attitude?)?

Secondly, people who have been treated remain often subclinical and vulnerable to relapse. We need to focus even more on this. Effect sizes are good but, as they say, there is room for improvement (Weisz, et al. 2017, 2019). Thanks to the digital progress, we have now APPS and we still try to develop APPS that can act as a daily coach for young people and their parents through the APPS. This is not a substitute for treatment interventions, it is more like a 'boost' that will undoubtedly benefit young people themselves and their parents. Thanks in part to external funding such as FWO Red Noses and Kom op Tegen Kanker, also our lab is now able to do leading work here and this will immediately find its way to the sector. I am happy to be able to contribute here for a number of years to come. I am closely following the findings from the APP studies and hopefully one day Developmental Psychopathology will put more efforts to become better in dissemination in this way, e.g. integrated mental health into school curricula. I'm grateful that some people in our lab are real pioneers in Belgium to put this dissemination train on the rails in a schoolcontext (see Weymeis, 2020 and Volkaert, 2021) as well as for families with an obese child (new work of Naets & Desmet) or through a multicentered study for youth with severe problems (Boelens, 2023). What's more, I think it would also be a great support for the numerous new psychologists who are now starting as first-line psychologists in the new domain, if they can rely on APPS. APPS

can be helpful as monitoring tool, as feedback tool, as FAQ coach but, in the case AI is still developing, it is not unrealistic to think about algorithms that identify early signs (for example based on wearables) that can predict a crisis, an outburst, an off-day, a binge episode, substance abuse, self- harm, or suicidal attempt, whereby prevention or early intervention by supportive people could be initiated immediately, and protect young people from all their suffering.

Studying APPS requires also new sophisticated research. I therefore express the hope that Ghent can continue to focus on therapy evaluations, but with refined designs, where plenty of expertise has already been built up by our own people (for an overview: see figure 4).

Figure 4: The Developmental Psychopathology Lab at Ghent University

Third, while the previous challenge 2 mainly concerns the digital developments in our own discipline, the so-called ehealth revolution, I think it also makes sense to focus more on **collaboration with other disciplines**. Also in Developmental Psychopathology we now take into account more and more an integrated bio-psycho-social perspective in which the psychology of a young person (intern world) is always looked intertwined within two other worlds, including an external world (a changing environment) and a 'biological world' : the 'under'world of the biological processes underlying what we feel, what we do, how we think or what motivates us, inseperable connected with the other worlds. The new framework in which Develop-

mental Psychopathology is increasingly being studied (RDOC, Insel, et al., 2010) lends itself perfectly to this and inspires new research to integrate all these worlds. Clinical symptoms are only the tip of the iceberg, we still don't know enough about the underlying processes, the triggers. Some of us even study epigenetics and genetic prototypes. However, discovery of a genetic factor does not mean that other influences are insignificant or can fix a limit; therefore, I myself have more affinity with the biological processes, that can be identified by biological markers.

Misconceptions about the role of genetic influences (source: Rutter, 1991)

We must abandon a number of stereotypes about the role of genetic factors. The fact is that the discovery of a genetic factor does not mean that other influences are insignificant or can fix a limit. As Rutter (1991, p. 128) puts it: "Genetic findings indicate that for most psychological characteristics within the normal range as shown by individuals reared in nonextreme environments, nonshared influences are probably much more important." He discusses 11 misconceptions:

1. *Strong genetic effects mean that environmental influences must be unimportant*
2. *Genes provide a limit to potential*
3. *Genetic strategies are of no value for studying environmental influences*
4. *Nature and nurture are separate*
5. *Genes for serious diseases are necessarily bad*
6. *Diseases have nothing to do with normal variation*
7. *Genetic findings will not help identify diseases*
8. *Genetic influences diminish with age*
9. *Disorders that run in families must be genetic*
10. *Disorders that seem not to run in families cannot be genetic*
11. *Single major genes lead only to specific rare diseases that follow a Mendelian pattern*

In our group, a number of PhDs are currently hardworking on the study of three biomarkers (there are much more of course), e.g. Cortisol, HRV and inflammation markers with fascinating questions that will be figured out the next 10 years of research, grounded by the work of Beauchaine (2001) like:

a. Can biological markers teach us more quickly who is under too much stress?

b. Can we better understand stress by relying on these biomarkers?

c. What effects does stress have on functioning?

d. Can HRV research also bring insights on a higher level through the study of co-regulation?

e. Are these biomarkers influential and how?

f. Can we also use these markers to find out if therapy really works (or even predict the chances of relapse)?

This new fields of research also pose numerous challenges to the infrastructure, research designs and analyses. But, it's more than worth as the findings could be revolutionary for the Developmental Psychopathology domain. I plead that Ghent can further rely on good lab equipment and find now and then (new?) sponsors for lab innovations. In the role of supervisor, I would also like to follow up this research line. I'm grateful to be able to work with various experts here, both inside and outside our university. We are fortunate that Prof. Matteo Giletta has joined us thanks to his prestigious ERC grant and is now contributing to the studies on both the biomarkers and the role of bullying; thanks to such collaborations, Developmental Psychopathology research in Ghent will undoubtedly be taken to higher levels.

I hope to become a silent witness of this challenge for the coming years. I am so proud that 7 of my 25 PhD students are now also professors and are putting all efforts together expanding these new domains already both in Leuven (conducted by Guy Bosmans) and in Ghent (conducted in our group by Lien Goossens, Wim De Mey, Ellen Moens, Sandra Verbeken and Laura Wante) respectively. These colleagues should be able to get tons of money; their research is so valuable and important but, it must be said, in Flanders there are no such 'tons', and unlike the big universities such as

Harvard and Oxford, the universities in Flanders are primarily educational institutions that groan under the 1000s of students studying Psychology. I therefore express the hope that their chances of further developing DP will not be hindered too much.

Finally, in addition to the evidence-based developments in research (and Developmental Psychopathology is now good at that), we also need to ensure that implementation and dissemination follow closely. If there is one thing I have confidence in, it is precisely this translation to the professional field that makes Ghent University unique. I am so proud that all other PhD students have now powerful functions both in policy, 'hoge scholen'(University technical Colleges) or clinical practice, whereby all of them has a valuable contribution to this dissemination endavour. I am therefore confident that Developmental Psychopathology will have a bright future, I may be too visionary and may look through too rose-colored glasses but, somewhere it is necessary if you want to build a domain: you can only really brave the mountain tops if you know that you have to go through many valleys but every time you reach a top, the panorama will be beautiful!

Ackowledgement.

May I start by thanking a few people without whom this domain would never have become what it is?

First of all, my husband Gerrit, my partner, thanks to his great support I could start already in the 80's with my own PC, long before a computer arrived at the department. Together we learned the programs to be able to use syntaxes for word processing and data processing, the old precursors of WORD, D-Base and SPSS and for all new steps I could count on him, unconditional. More then 40 years, he was my big supporter, surrounded by my children, my brothers, my parents, my family and friends who probably only saw the surface: an absent-minded professor, always struggling with deadlines, unforeseen obstacles, on the road for about 160 jury's of doctoral defenses somewhere in the universe, and even more away from home for conferences, fighting day by day with too little 'free time'. I would like to mention that we also work together with many stakeholders, unconditional important including CLB's, the VVGT, CKGs of Kind& Gezin, the partners of the large studies: Generation2020, Welcome study, OPERA, the Reward project, the knowledge centres such as 'Gezond Leven' and

EETEXPERT who disseminate our insights and ask us critical questions. Here I would like to mention also the clinics, the University Hospital, Palfijn clinic, UZA (Antwerp) and of course, the Zee-preventorium. Here, Lady Ann Tanghe needs a special recognition because of her unconditional support for the so many studies that have been running in her clinic over the past 30 years.

Moreover, we are surrounded by a team of 10 teaching assistants who are extremely dedicated, real science practitioners and who, together with us, translate (and evaluate) the insights to the 2000 students every year so, these students can always learn the most recent know-how in Developmental Psychopathology.

Sometimes we drowned in technical problems, financial and/or oh so much administration. How good that we were surrounded by a team of ATP: countless times. I came by these people with problematic issues. I 'm afraid I will forget people here but, most of all I'm grateful to Mark from the test library, Bart from FDO, Ellen from the dean's office; and then from PP07 the vibrant secretarial team with Yvettje, Annettje, and later Katrien, Steven and Anja. Without all of you, we would never have been able to expand our domain so well. I would like to thank my colleagues for all their supportive feedback and a special thanks to Marcel Vanaken who reviewed this text. Finally, I would like to thank the Department PP07, Faculty FPPW Ghent and our deans Geert Desoete and Ann Buysse; without them my dreams would never be convert in all the amazing developments and realisations in the course of 40 years in our domain of Developmental Psychopathology in Ghent.

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Laudatio Eric Moormann

Roald Docter

It is an extraordinary pleasure that today I may introduce Emeritus Professor Eric Moormann of Radboud University Nijmegen and currently Liebig-Professor at the Justus-Liebig-Universität in Gießen and combine that with a short laudatio on the occasion of the presentation of the Sarton Medal of Ghent University. This medal will be presented to him by our Dean, Prof. Gita Deneckere, following an undoubtedly very interesting lecture on Caylus and Winckelmann.

Let me begin with a story about Eric Moormann that has long been doing the rounds in Dutch archaeological circles, at the University of Amsterdam where he was a lecturer for many years, and at the Netherlands Institute in Rome where he was Head of the Department of Antiquities for five years and later ad interim director. It is a story I have never been able or dared to verify with him myself. So perhaps now is the time to do so, but anyway: *se non è vero, è ben trovato*, which is Italian for: if it is not true, it is nevertheless well found.[1]

Eric Moormann received his training as an archaeologist at the Catholic University Nijmegen, now Radboud University, a.o. with his later supervisor Professor Wim Peeters. Nijmegen has always been an important center for research on the Roman Vesuvius cities around the Gulf of Naples. And now I come to the story I have heard many times. On his first archaeological dig, he is said to have taken up a large pickaxe and with a firm swing it landed on the tip of his foot. End of his career as a field archaeologist ... but beginning of a glorious career as a specialist of ancient murals, mosaics, sculptures, of iconography and iconology of ancient art, of the topography

[1] The laureate later confirmed that the story was true.

of Pompeii and ancient Rome, of the transmission of Classical Antiquity (reception history / *Nachleben*), and last but not least, the history of archaeology. We have just had the opportunity to hear from Prof. Rubens how much George Sarton may be considered one of the founding fathers of the history of science as a discipline. If we consider archaeology as a science (I'll come back to that in a moment), then with Eric Moormann we have before us a *homo universalis* who is more than deserving of the Sarton Medal of History of Science.

I have come to know Eric Moormann as an erudite, extremely well-read, versatile and always well-dressed scholar. However, we can hardly call him a true field archaeologist, with a trowel, brush and pickaxe in an excavation pit - as the general public likes to see the archaeologist. Thus, if I were to exaggerate, I might raise the question of whether we can then still consider him a real archaeologist.

As an aside, nevertheless, we cannot say that archaeological fieldwork completely deterred him - after the first pickaxe incident. Between 2001 and 2004, in collaboration with Prof. Herman Brijder of the University of Amsterdam and Dr. Miguel-John Versluys of Leiden University, he carried out a major research and restoration project at Nemrud Dağ in southeastern Turkey (now published; the book is in our library). Since 2009 he has also collaborated on excavations at the 5th mile of the Via Appia in Rome in a project of the Radboud University, the Vrije Universiteit Amsterdam, and the Royal Dutch Institute in Rome.

How can we then characterize Moormann's approach to archaeology? In his oration upon accepting his appointment as professor in Nijmegen in 2002, he said the following, addressing the students “Ladies and gentlemen students, we hope to train you to become archaeologists or, as the case may be, antiquaries and art historians who study material culture in relation to historical and cultural developments.”

Since at Ghent University even Art History has been renamed Art Sciences (‘Kunstwetenschappen’; incidentally, much to the displeasure of my predecessor in Ghent, Prof. Herman Mussche), we may certainly consider archaeology a science. And certainly in Ghent, archaeology has evolved in recent decades from a discipline defined by geographical, cultural-historical and chronological divisions (with archaeologies of the Ancient Near East, Greece, the Roman Mediterranean, in addition to prehistory,

Bronze and Iron Age, Provincial-Roman, Medieval and post-medieval periods of northwestern Europe), to a broader discipline defined more by exact-scientific methods. The arrival of three professors in Archaeometry, Physical Anthropology, and Paleoecology, and three affiliated professors in Geophysical Prospecting Techniques, Petrology, and "Archaeological Sciences" has only strengthened the long-standing collaborations with other STEM faculties.

But back to the laureate: without wanting to take up much more of the time, I cannot avoid mentioning some of Eric Moormann's great achievements and attributes. Since 2001, he has been editor-in-chief of one of the oldest archaeological journals, *BABESCH. Annual Paper on Mediterranean Archaeology*, and also a member of its associated supplements committee. Many Ghent researchers have published in both. Moormann is also considered a gifted editor of scholarly volumes, apart from having a huge publication output based on his own research. In addition, he has contributed substantially to the dissemination of knowledge of the ancient world to a wide audience; also in the form of catalogs accompanying exhibitions, such as most recently on the Roman emperor Domitian. You can see a small selection of his publications in the display cases in the entrance to the faculty library.

The Department of Archaeology, followed by the faculty, was convinced that someone who has filled the archaeological discipline so broadly and also published so widely on the history of archaeology as a science deserves to receive the Sarton Medal.

It remains for me to thank a number of people who helped prepare for this celebration: Lili Tack, Quentin Drillat, and Sydney Patterson of the department of Archaeology; Annelies Lefebvre, Tanja Vertriest, and Gita Deneckere of the Faculty of Letters and Philosophy; Anne-Lise VanDerMeulen, Rebeca Debeerst, and Paul Buschmann of the Faculty Library; and Rita Malfliet, Robert Rubens, and Maarten Van Dijk of the Sarton Committee.

The Beginnings of 'Global Archaeology" in the Work of Pioneer Researchers Caylus and Winckelmann

Eric M. Moormann

> En examinant les précieux restes des Anciens, on peut concevoir une idée sûre de leur goût. Les Arts portent le caractère des Nations qui les ont cultivés ; on démêle leurs commencements, leur enfance, leur progrès & le point de perfection, où ils ont été conduits chez tous les Peuples. On ne distingue pas mieux le génie de ces peuples, leurs mœurs, la tournure de leur esprit, s'il est permis de parler ainsi, dans les Livres qu'ils nous ont laissés, que dans les ouvrages de Sculpture & de Peinture, qui sont parvenus jusqu'à nous. […] Mais rien n'est comparable à la satisfaction de prévoir une utilité publique.[1: II, p. i-ii]

1. Introduction; Antiquarianism and the First Notions of Archaeology

The Sarton Medal is a prestigious and extremely honourable distinction bestowed on persons who have contributed to the field of the history of research and science. I feel greatly honoured to receive this distinction for studies on the history of archaeological research carried out over the past three decades next to my more traditional duties as a classical archaeologist, and like to express my gratitude to the Sarton Foundation as well as my colleague and friend Roald Doctor and the Board of the Faculty of Humanities. Among the prerequisites to combine archaeology in practice and

history of archaeology, is the acquisition of a deeper awareness of one's position within the "longue durée" developments of one's field of research. We are links in a long chain of scholars, from amateurs or dilettanti in the Renaissance via antiquarians in the Baroque and Enlightenment up to archaeological scientists working sometimes at a considerable distance from addressing cultural history. We work with artefacts stemming from excavations, but also pieces which have never been lost and have remained among us. Often, we rely on a long-standing tradition of scholarship, wherein it can be profitable to read old texts about long-known sites and objects.

The history of classical studies is an uninterrupted chain of expressions, from antiquity itself through the Middle Ages up to – what may be more familiar to many of us – the upsurge of classics in the Renaissance. From then on *Altertumswissenschaft* has never been off the academic agendas in universities and learned societies all-over Europe.[2][3]

The archaeology of ancient societies in the Mediterraneum has various fathers (and only much later, some mothers) and many scholars like to linchpin its origin to such a founding father. One of the first persons called 'father of archaeology' is the fifteenth-century merchant Ciriaco de' Pizzicolli from the Italian port of Ancona, who during his commercial and diplomatic trips through the eastern Mediterranean collected data on ancient sites.[4] He made extensive notes and collected ancient inscriptions, some of which we only still know of thanks to his recordings. To him we owe the first images of the Great Temple on the Acropolis of Athens and observations about its architecture and sculptural decoration. He wrote his texts in a self-taught Latin, ridiculed as macaroni Latin by some of his correspondents. The collection of inscriptions evidently was his core business instead of an in-depth study of the monuments, which we can hardly expect. But, even if collecting is a great and basic activity we must fulfil as students of material culture, *Sammelfleiß* is not all! And so, Ciriaco's work gives no insight into Antiquity, nor does it reveal his views on the remote past.

But we can say, without hesitation, that his basic activities stand at the beginning of a fascinating era of antiquarianism during the Renaissance and Baroque and waning, but never fully ending in the epoch of eighteenth-century Enlightenment.[2][3] Much of early research has concentrated on ancient textual sources: their motto was that we should read the classics, edit them in good editions with critical notes and provide them with learned commentaries in which the content of these text would be made

more understandable. Yet, many of these illuminations and explanations were written for the connoisseurs' eyes only. My field, classical archaeology, primarily developed as an ancillary discipline with the help of which difficult text passages could be illustrated – both literally and in figural sense. The Greek and Roman gods look as they do on this or that object, banqueting takes place in the way we see it on this or that relief, and horse gear of a military rider functions as depicted on some relief of a triumphal arch. The rise of the printing press made the spread of images easier and gave chances to book-printers to include illustrations endorsing the research just described. Data sets, aptly called paper museums, collected by cognoscenti like Cassiano dal Pozzo, had a wide circulation in the form of copies sent to correspondents who had asked for specific monuments or images that illustrated a topic they worked on.

However fundamental all this work was, it did not usually lead to attempts to explain the material antiquities as cultural expressions of a historic era in their own way. Antiquarians did not seek to explain the relevance of the objects they assembled and studied nor clarify what importance they could have to those outside their field. They took Greek and Latin texts to be so venerable as to stand above all other scriptures apart from the Bible. The ancient authors were considered a Holy Script as well. This still was the case when the Benedict father Bernard de Montfaucon assembled a huge collection of thousands of images

This situation was soon to be changed, however. The increasing scientific attitude, tending towards a systematization of all categories in nature as well as culture, yielded not only Carl Linnaeus' systematization of animals and plants, and Charles-Louis Leclerc Comte de Buffon's natural history, but also the first *Dictionnnaire historique* et critique by Pierre Bayle, in its turn rapidly surpassed by the *Encyclopédie* of Jean Le Rond d'Alembert and Denys Diderot. Large historical studies like Charles Rollin's *Histoire Ancienne* were published next to treatises on economy and law as knowledge and rational perspective on society and history boomed. Enlightenment intellectuals were interested in bigger questions concerning culture and evolution indeed. It is in this atmosphere that we should place the two protagonists of my presentation, Caylus and Winckelmann.

2. Caylus and Winckelmann, Protagonists in the Study of Antiquity in the Eighteenth Century

Let me briefly introduce them, to begin with the senior Anne-Claude-Philippe de Thubières, de Grimoard, de Pestels, de Levy, Comte de Caylus (fig. 1). After a brief career as a military servant of king Louis XIV and experiencing the emptiness of an existence devoid of concrete battles or sieges, he left the service and dedicated his life to letters and arts. In 1715 and 1716, he had the opportunity to travel to Italy and Asia Minor. There he experienced the physical contact with many ancient vestiges which stirred his interest in the history of ancient arts, especially that of the Greeks and Romans. Back in Paris, Caylus fostered contacts with young artists and engaged in debates on their work, while also publishing prints of their works. Gradually he became acquainted with learned circles as well, but considering all too many scholars pedantic and vain, closeted within their stuffy libraries, he preferred to remain an antiquarian and amateur. Con-

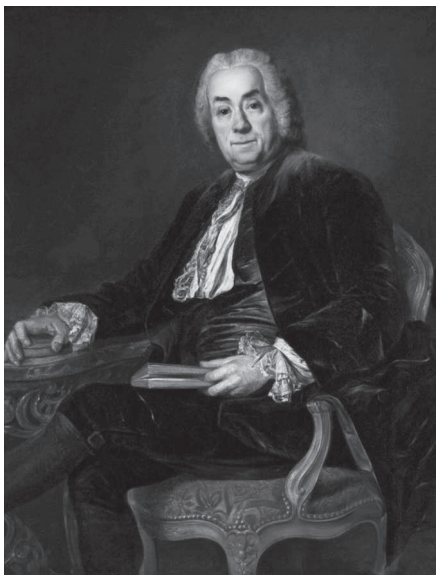

Fig. 1. Alexandre Roslin, Portrait of the Comte de Caylus, ca. 1752-153. Oil on canvas. Warsaw, National Museum (Wikimedia Commons).

Fig. 2. Angelika Kauffmann, Portrait of Johann Joachim Winckelmann, 1764. Oil on canvas. Zürich, Kunsthaus (Kunsthaus Zürich Sammlung online).

sequently, his knowledge of antiquity derives from his own collection of objects rather than the study of ancient written sources and weighty books.

By contrast, Winckelmann's background is much more modest (fig. 2).[8] [9] Child of a cobbler in the old Hanze town Stendal, he could only nourish his vast spirit by starting a career in theology. Studies in Berlin and Halle brought him in contact with medicine, aesthetics, and the classics. In 1748, after some years of toiling as a teacher, Winckelmann started researching in one of the largest private libraries, that of count Heinrich von Bünau, in Nöthnitz near Dresden. Thanks to that he became familiar with learned and artistic circles in Dresden and could publish his first booklet, *Gedancken über die Nachahmung der Griechischen Wercke in der Mahlerei und Bildhauerkunst*, in 1755 (fig. 3).[10: p. 51-77] This work that French literati had the fortunate instinct to have translated into French and which also came out in English considers modern art as the reflection of perfect Greek art. Winckelmann was sent as a sort of spy to Rome and Naples, to investigate the tracks of his Saxon patron's daughter Maria Amalia who had through marriage become Queen of Naples and to alert the home front to the yields of the explorations in Herculaneum and Pompeii.[9: p. 24-28, 164-179] He developed his scholarship thanks to the help of local benefactors and friends. His main stimuli became a daily, immediate contact with ancient works of art in Rome, a town as replete with Greek reminiscences, while it was yet stuffed to the brim with what he saw as barbarous modern art that entirely failed to understand that Greek culture formed the roots of civilization.

Caylus and Winckelmann never met but knew each other's published works. It is, I think, unlikely they would have befriended each other because of the difference in temperaments, age, and social background, to name but a few. For Winkelmann, Caylus would probably have been a simpleton, for Caylus Winckelmann will probably have been over-serious or even pompous.[5: p. 133-134, note 1]

Within the Republic of Letters, of which both were part, correspondence between learned men and women stimulated the exchange of opinions and discoveries, and it is enticing to conjecture what these men would have written to each other.[11] Therefore, I have dared to compile two fictitious letters in which the two men present their ideas. They are a sort of *centones*, texts composed of quotations from their works. Let me underline that I am aware of the risk that singling out specific phrases out of their original context may be unfair to the authors' original expressions. After presenting


Gedancken
über die
Nachahmung der Griechischen
Wercke
in der
Mahlerey und Bildhauer-Kunst.

Vos, exemplaria Græca
Nocturna versate manu, versate diurna.
HORAT. ART. POET.

1755.

Fig. 3. J.J. Winckelmann, Gedancken über die Nachahmung griechischer Wercke in der Mahlerey und Bildhauerkunst, Dresden 1755. Dresden, Sächsische Landesbibliothek (Wikimedia Commons).


Johann Winckelmanns,
Präsidentens der Alterthümer zu Rom, und Scribtore der Vaticanischen Bibliothek,
Mitglieds der Königl. Englischen Societät der Alterthümer zu London, der Malereacademie
von St. Luca zu Rom, und der Hetrurischen zu Cortona,

Geschichte der Kunst
des Alterthums.

Erster Theil.

Mit Königl. Pohlnisch- und Churfürstl. Sächs. allergnädigsten Privilegio.

Dresden, 1764.
In der Waltherischen Hof-Buchhandlung.

Fig. 4. J.J. Winckelmann, Geschichte der Kunst des Alterthums, first edition, Dresden 1764 (Wikimedia Commons).

them, I'll try to discuss some of these reflections hoping to explain the notion of 'global archaeology' as a constitutive element of their work.

As to the letters' style, please remember that both men could be very direct in their expressions and did not hesitate to express objections and level criticism without flattery. From his position, Caylus could be 'impetuous', with a 'military' pen which was not accustomed to being contradicted, whereas he could be indulgent, respectful, and empathic at the same time. [12: p. 1711] Winckelmann, on his part, despised many 'Scribenten' and uttered his contempt for entire nations like the French and the British in gross generalisations, but he too could be charming and attentive. For both men, their own authority was never in question, and the letters which follow present them from their frozen points of reservation against the addressee. I must admit that Caylus' letter is much longer than Winckelmann's, but this unbalance might be in proportion to the masses of studies published by the two scholars.

Caylus and Winckelmann, an Epistolary Exchange

Letter from the Comte de Caylus to Johann Joachim Winckelmann

Paris, Fall 1760[1]

Dear Sir,

In one of his letters, our mutual friend father Paolo Maria Paciaudi forwarded me from Rome your words of praise about my work. These remarks stimulated me to contact you. Maybe we can engage in a correspondence like the one I have with Paciaudi and with Jean Jacques Barthélemy, a fine man you also know.[13: p. iii-xviii][41]

Quite recently, the learned circles in Paris got the opportunity to read, with acclaim, two of your writings on the ancient arts and their position within modern society, in new translations [see note 1]. Like a previous one of your first essays, they have facilitated the reading of your German texts by me and others. These essays are, let us hope, a step towards a broader dissemination of your ideas. Your book on the intagli of the Stosch collection sits on my desk and promises to be a great read, also thanks to my own fascination for this class of objects. If I am not mistaken, you are currently working on an all-encompassing History of Art in Antiquity (fig. 4).[15] I hope that I will see the day of its publication, as I am an old man of 68 and somewhat weak of health, but I will surely subscribe to it.[2]

As you may know, I am an avid collector of ancient objects and less a student of ancient written sources and weighty books.[16][17] Collecting antiquities of a wide range of civilizations has made me acquainted with many cultures or nations, from China to my fatherland, and all this has brought me to write down some findings which - so I expressly want to state - are neither based on a theoretical background nor pretend to become a theoretical paradigm in itself. I am not a 'philosophe' like many of my compatri-

1 I take this date because of two recent translations of Winckelmann's work into French, undoubtedly seen by Caylus: Erinnerung über die Betrachtung der Werke der Kunst = Réflexions sur les Ouvrages de l'Art, Journal Étranger, April 1760, p. 49-67; Von der Grazie in Werken der Kunst = Réflexions sur le Grace dans les Ouvrages de l'Art par l'Abbé Winckelmann, Journal Étranger, July 1760, p. 105-119. For the original versions: 14, p. 1-7 and 9-14; 28. For translations of Winckelmann's oeuvre: 9: p. 235, 333-336

2 13: p. 300 (letter late 1763): Je vous remercie de tout mon cœur de ce que vous voulez souscrire au livre de Winkelmann ; mais il n'est pas question de payer jusqu'à ce que ce livre ait paru. Trois sequins font trente francs et quinze sous ; vous les donnerez dans le temps.

ots' style themselves! I argue that a study of ancient material culture should start from the material itself, the objects, and not from literature. *Prima gli oggetti e poi le parole*, to vary on an Italian motto. Single-handedly drawing and etching the objects, as faithfully as possible, is not only a nice pastime, but fundamental for my method. The drawing process helps me to distinguish the individual 'goût' or style of a work, and, consequently, of a nation.[18]

'The ancient monuments serve to increase our knowledge. They explain the singular uses, they illuminate facts obscure or badly detailed in the Authors, they bring the progression of the Arts under our eyes and serve as a model to those who foster them.'[3] We need enlightened eyes or 'yeux éclairées'.[1: I, p. viii] Objects show features which convey specific characteristics of the country where they were made and, in some cases, of the artists involved. We can even detect a certain development within a set of objects from the same country, from simple and clumsy via matured towards a decay consisting of a loss of coherent shape and content.

With the thousands of objects, which are my *guenilles* or rags,[19: p. 237] I have had the opportunity to acquire insight into or to become familiar with the 'goût' and 'manière' of four principal ancient 'nations' or 'cultures'. All this also thanks to notices sent by friends over the past decades. 'The cults of a people are recognizable from the symbols which characterize the gods; its taste [goût] is indicated by the manner [manière] in which it clothes its figures.'[4] My concepts have been eternized in a series of papers and, more specifically, the volumes of my *Recueil* in which each of these objects is illustrated, described, and explored according to various fixed topics (fig. 5). Basic are provenance, maker, material, technique, and size. Manner or style and iconography and function follow.[19][20]

I want to 'study with fidelity the esprit and the hand of the artist, to penetrate his views, to follow him in the making process, in one word, to consider these monuments as the proof and expression of the taste that reigned in an era and in a country. The ancient monuments are ideal to extend our knowledge and make clear facts, still obscure or hardly envisaged by the

3 1: I, p. ii: Les monumens antiques sont propres à éteindre les connoissances. Ils expliquent les usages singuliers, ils éclaircissent les faits obscurs ou mal détaillés dans les Auteurs, ils mettent les progrès des Arts sous nos yeux, & servent de modèles à ceux qui les cultivent.

4 1: I, p. vii: Les cultes d'un peuple se reconnoît aux symboles qui caractérisent les divinités ; son goût est indiqué par la maniére dont il habille ses figures.

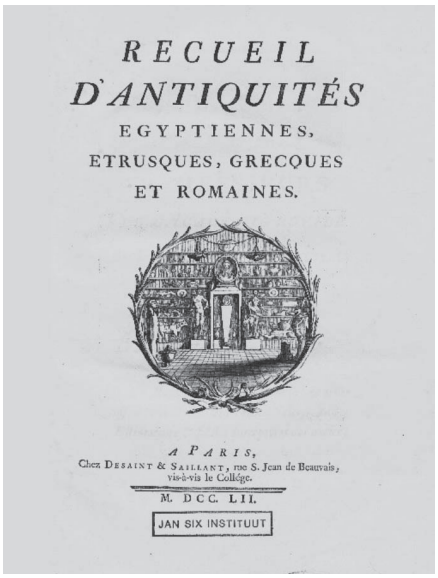

Fig. 5. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines I, Paris 1752 : frontispice. Amsterdam, Allard Pierson (Courtesy Museum).

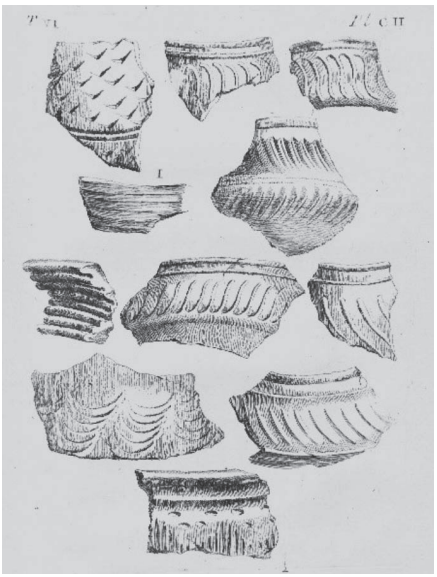

Fig. 6. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines VI, Paris 1764, pl. CII : sherds of wheel-turned elegant, but yet coarse pots (p. 319-320). Amsterdam, Allard Pierson (Courtesy Museum)

Authors, they bring to our eyes the progression of the Arts and serve as a model to those who honour them. But we should admit that the Antiquarians have almost never regarded them from this last point of view: they have only seen them as supplementary proofs of written history.'[5]

Now looking at your work, I feel a deep abyss between you and me concerning our respective choices of objects.[20] You discuss the highest forms of art, while am rather fed up with 'well preserved objects, these cold Apollos, these attractive pretentious Venuses, etc. […] I compare the fine antiquities with the fine ladies and the fine gentlemen whose dress is perfect, who arrive en groupe, show themselves and don't learn anything; I, however, sometimes distil the subject of a dissertation and the object of

[5] 1: I, p. III: étudier fidèlement l'esprit et la main de l'artiste, à se pénétrer de ses vues, à le suivre dans l'exécution, en un mot, à regarder ces monuments comme la preuve et l'expression du goût qui régnaient dans un siècle et dans un pays. […] Les monuments antiques sont propres à étendre les connaissances […] Ils éclaircissent les faits obscurs ou mal détaillés dans les Auteurs, ils mettent les progrès des Arts sous nos yeux et servent de modèles à ceux qui les cultivent. Mais il faut convenir que les Antiquaires ne les ont presque jamais envisagés sous ce dernier point de vue : ils ne les ont regardés que comme le supplément et les preuves de l'histoire.

a discovery from a broken piece I will compare, in this case, with a dirty man who goes on foot.'[6] 'The study of Antiquity does not allow for any exclusion, and often a fragment hardly recommendable by its material and dimensions will ask for more discussion and will produce more insight than a monument of self-evident value and uncontroversial magisterial status from an artistic point of view.'[7]

I cannot fully comprehend your evaluation of the deeper intentions of the artists as tokens of superiority, when you write: 'Please notice whether the maker of the work you are contemplating, has thought independently or only imitated; whether he has known the main intention of art, Beauty, or whether he has only created after the forms familiar to him; and whether he has worked as a man or played like a child.'[8] For me, my small niceties, my *guenilles*, are satisfying, even though they often represent the same subjects, in the same style, and even in lesser quality than desired (fig. 6). They are as expressive of the respective nations as the great works you bring to the fore and may even be said to bring us nearer to those nations' cultures. The same reservation I feel for your charming praise of Grace [Grazie] as 'the genuine reaction of the acting person in respect to the action,' which should imply an external hiding of emotion and permanent show of countenance.[9] How boring!

Before sketching more in detail the 'goût national', the 'dessein', and the 'manière' of the nations studied,[1: I, p. viii] I should make clear that if collecting is certainly the task of antiquarians, it is to be hoped that they won't do it for their selfish greed of possessing objects. The highest aim of collecting is publication and 'nothing is comparable to the satisfaction to foresee a public utility' [see motto] of them. Therefore, in 1755 a great part of

6 13: p. 345 (letter to Paciaudi from 28 August 1758): Je vous ai témoigné du dégoût pour les morceaux de belle conservation, ces froids Apollons, ces belles prétendues Vénus, etc. […] je compare les belles antiquités aux belles dames et aux beaux messieurs dont la toilette est complète, qui arrivent dans une compagnie, se montrent et n'apprennent rien ; au lieu que je retire quelquefois d'un morceau fruste, que je comparerai en ce cas à un homme crotté et qui mache à pied, le sujet d'une dissertation et l'objet d'une découverte.

7 1: III, p. 329 [also in 12: p. 1720]: Mais l'étude de l'Antiquité ne donne point d'exclusion, et souvent un fragment peu recommandable par sa matière et par son volume exigera plus de discussion et produira plus d'éclaircissements qu'un monument clair par lui-même et qui ne présentera qu'un chef-d'oeuvre du côté de l'art.

8 14: p. 3: Gieb Achtung, ob der Meister des Werkes, welches du betrachtest, selbst gedacht oder nur nachgemachet hat; ob er die vornehmste Absicht der Kunst, die Schönheit gekannt, oder nach den ihm gewöhnlichen Formen gebildet; und ob er als ein Mann gearbeitet oder als ein Kind gespielet hat.

9 14: p. 11: Ihre Eigenschaft ist das eigenthümliche Verhältniß der handelnden Person zur Handlung.

my collection passed from my private home to the national Cabinet of the King, here in Rue Richelieu, where all citizens may have opportunities to study them and assess my findings with their own eyes.[16][12: p. 1725]

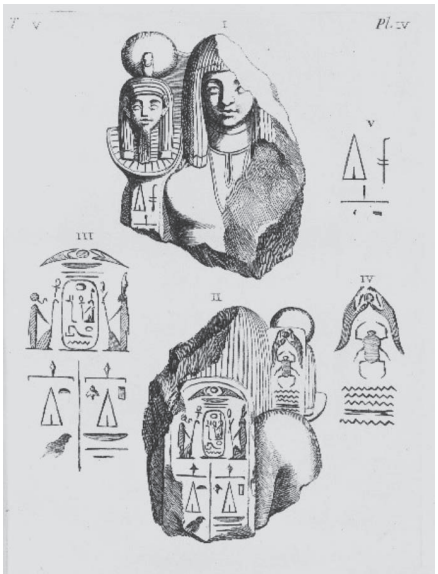

Fig. 7. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines V, Paris 1762, pl. IV : basalt statue and priestess with dorsal pillar and hieroglyphs (p. 11-15). Amsterdam, Allard Pierson (Courtesy Museum).

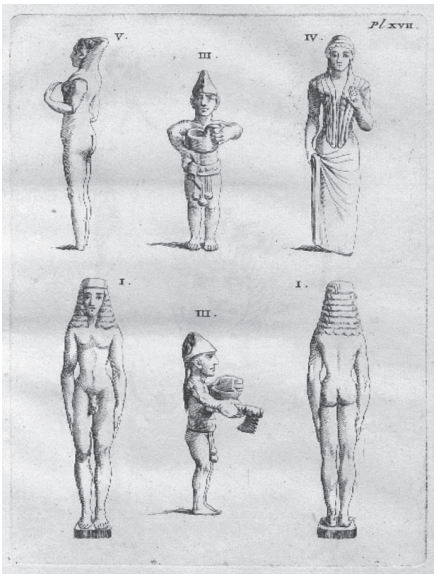

Fig. 8. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines III, Paris 1761, pl. XXVI: statuettes of warriors, perhaps Cisalpine Gaul and Sardinia showing 'a possible communication between Etruria and Sardinia' (p. 101). Amsterdam, Allard Pierson (Courtesy Museum).

Predecessors like Giorgio Vasari and Bernard de Montfaucon already connected the general characteristics of nations with specific artefacts, but they did not try to systematize their observations.[21: p. 40-43] I hope to have done a valid attempt for four of them. The most antique ones are Egypt and Etruria, each followed by Greece and Rome respectively. Some more cultures, like Persia, the Phoenicians, and Ethiopia, come to the fore as sources of inspiration.[22] Their 'Kunstwollen' (if I may use a German word that, most unfortunately, I had not the opportunity to coin) acquired concrete form in my work thanks to the study of multitudes of objects over decades. A certain number of specific objects serve to guide the streams of developments. Constitutive factors for each nation are climate, a subject

developed in recent decades on the basis of ancient notions that shows to be a forceful stimulus of social and cultural attitudes. Also, the government the countries are subjected to significantly affects and cultural production. In a certain way, religion may play a role here as well, but as a liberal and nonreligious person, I prefer to stay away from [too much] religious quibbles. Superstition is one of the greatest vices detrimental to old and modern cultures alike.[e.g. 1: I, p. 75; III, p. 153, 185; IV, p. 137]

One irritation experienced during my study is the vanity of scholars who propose 'new ideas' or 'inventions' as if coined by them, when in fact they draw their inspirations from specific sources which they should therefore properly quote. In my view there is little new under the sun, and the public record clearly indicates as much. 'The art of printing the use of which preserves and divulgates the opinion and the criticism of the Learned has disabused the peoples of the vanity that engaged them before to pretend not only the most ridiculous origins, but to attribute to themselves the invention of various insights which other Nations had communicated to them.'[10]

Unfortunately, patriotism frequently is at stake, of vainglorious philosophers and idle sovereigns alike, but all countries adapted things from other countries: Egypt from Ethiopia, Greece from Egypt, and the Romans from the Etruscans.[1: VI, p. 218; VII, p. 121] In general, we see that simplicity is the base of all quality. And my *guenilles* demonstrate that clearly or show when it is not true.

Egypt has a venerable, very old culture, which yet is shrouded in mystery due to our incapability to read their hieroglyphs. The Egyptians built huge monuments and made sculptures of people standing against pillars and often covered these with hieroglyphs (fig. 7). Their country enjoyed a fantastic moderate climate, the presence of the Nile and a government of wise men. People did not tend to strive for innovation, and hardly made any advances in technique and other matters. Superstition played a dominating role. Their contacts with other nations were vivid and fundamental: 'The more we study and examine the antiquities of this wise and illuminated

[10] 1: VII, p. 149: L'imprimérie, dont l'usage conserve & multiplie l'opinion & la critique des Sçavans a corrigé les peuples de la vanité, qui les engageoit autrefois à s'arroger, non-seulement les origines les plus ridicules, mais à s'attribuer l'invention de plusieurs connoissances que d'autres Nations leur avoient communiquées

people, the more we will discover traces of the communication it has had very early on with its neighbours.'[11]

The Etruscans are also mysterious: there are almost no textual sources, and the inscriptions are 'inexplicable' (fig. 8). 'This nation was courageous, powerful, and dominated for a certain time the sea.' They degenerated by submission to the Gauls and the Romans. A negative factor is that they were 'excessively superstitious, always busy to draw predictions from the flight of the birds or to study the will of the Gods in the intestines of victims.' There was a 'reciprocal commerce' between the Egyptians and the Etruscans: both are old, have similar statues, use to inscribe objects with texts, and both had griffins and winged lions.[12] How beautiful the Etruscan vases;[17: p. 73-81] 'what a wisdom in some of their recurring ornaments! What a lightness in their working the clay! What an apt positioning of their handles!'[13]

'The Greeks have dismissed the taste for the monumental and prodigious of which the Egyptians had given them the example (fig. 9). They diminished the volumes and added elegance and harmony in the details.'[14] Greece was a wise and rich country, enjoying a moderate climate and moderate rulers. Philosophers and literary authors had a benevolent influence and arts were stimulated.[1: III, p. 2; IV, p. 3] Their arts are relevant for modern artists who can reach the 'noble and simple manner of ancient beauty'.[15] But they could be arrogant as well. With the ascent of Alexander the Great power became a vice and led to a decline of the arts.

'We know almost everything concerning the Romans; they have been the first object of the curiosity of modern scholars.' Yet we should study their tradition and relationship with the Etruscans and other nations (fig. 10). 'For the Romans have borrowed from the Etruscans in the first place of the Greeks in the second, and finally they have welcomed the cult and the

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11 1: III, p. 1: Plus on étudie, & on examine les antiquités de ce peuple sage & éclairé, plus on découvre des vestiges de la communication qu'il a eue très-anciennement avec ses voisins.

12 1: I, p. 77: inexplicables; p. 78 : ce peuple était courageux, qu'il étoit puissant, & qu'il eut pendant un temps l'empire de la mer […] superstitieux à l'excès, toujours occupé à tirer des présages du vol des oiseaux, ou à étudier la volonté des Dieux dans les entrailles des victimes. […] commerce réciproque.

13 1: I, p. 80: quelle sagesse dans quelques-uns de leurs ornemens courans ! quelle légèreté dans le travail de la terre ! quelle justesse dans la position de leurs anses !

14 1: I, 119: Les Grecs se sont écartés du goût pour le grand & le prodigieux, dont les Egyptiens leur avoient donné l'exemple. Ils ont diminué les masses, pour ajoûter de l'élégance & de l'agrément dans les détails.

15 1: I, p. xiii: manière noble et simple du bel antique.

ornaments of the Egyptians. These eras are defined, whereas, without any interruption, they have received among them and even brought to Rome all the Gods of the Nations they have conquered; this custom stuck to their Superstition, and consequently they have followed it constantly.'[16] So, we infer that Rome profited from all three previous cultures and was not a nation of original thinkers.

Fig. 9. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines VI, Paris 1764, pl. XXXVII : terracotta statuettes from Camarina which convey an impression of their 'Egyptian source' (p. 120). Amsterdam, Allard Pierson (Courtesy Museum).

Fig. 10. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines I, Paris 1752, pl. LXIX : Sabina in the guise of Ceres. Amsterdam, Allard Pierson (Courtesy Museum).

Gallia, the predecessor of my own country, has become an extra nation in my studies from the second volume of my *Recueil* onwards (figs 11-12). It is difficult to glean the characteristics of a people without texts and civilization, overwhelmed by Caesar, the wise and cruel conqueror, who

[16] 1: VI, p. 217-218 : On n'ignore presque rien de ce qui regarde les Romains ; ils ont été le premier objet de la curiosité des Sçavans modernes. […] [C]ar les romains ont emprunté des Etrusques en premier lieu; des Grecs dans la suite ; enfin ils ont admis le culte & les ornemens Egyptiens. Ces époques sont marquées tandis que, sans interruption, ils ont reçu chez eux & porté même à Rome tous les Dieux des Nations qu'ils ont vaincus ; cet usage tenoit à leur Superstition, par conséquent ils l'ont suivi constamment.

brought Roman civilization to our country. With the help of local engineers and architects I try to get more insight into the older substrata as well as the Roman remains.[1: IV, p. 370-373; VII, p. 237-239][17: p. 101-121]

Yet we should avoid keeping these four nations strictly separate – and other cultures which we can not discuss extensively due to the scarcity of relevant objects. They functioned in a larger world encompassing the entire Mediterranean and had neighbours with which they interacted. In the comments to many of the objects, therefore, I must admit that their being subsumed under but one of the 'captions' is misleading because they possess features occurring in more than one culture at a time. Pureness is rare!

Sometimes there are doubts about the origin of objects under study. Take the finds from Herculaneum, a Greek town (fig. 19):[23][24] 'One does not

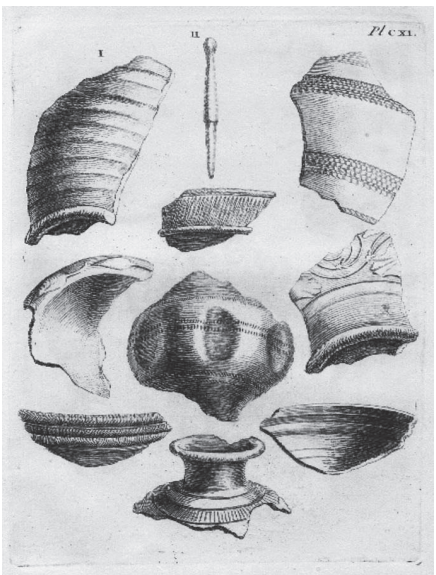

Fig. 11. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines III, Paris 1761, pl. CXI : fragments of ceramics found in Paris near S. Géneviève (p. 402). Amsterdam, Allard Pierson (Courtesy Museum).

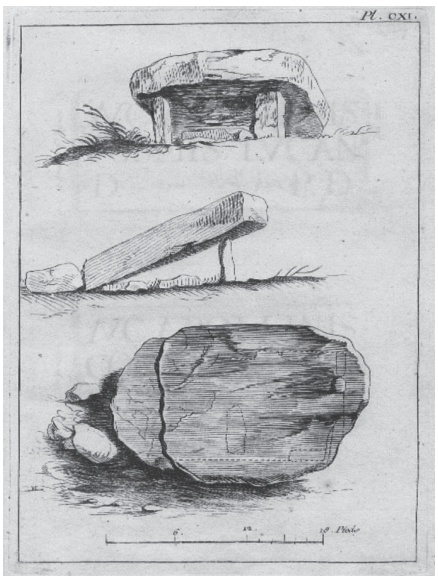

Fig. 12. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines IV, Paris 1761, pl. CXI : 'pierre levée' of remote time near Poitiers, maybe a tomb (p. 371). Amsterdam, Allard Pierson (Courtesy Museum).

know too well in which class one should place the monuments from Herculaneum: this town is, in a certain way, an amphibia for the antiquarians.'[17]

The selection of the objects I have studied relies on their interest rather than beauty. 'A monument that does not teach us anything has but a limited importance, satisfying only a small part of a curiosity which extends but to beauty and the details of their form and technique.'[18]

Technique is a matter often neglected. I recall a debate engaged by me about the use of encaustic painting in Antiquity: many people refuse to admit the capabilities of the Ancients in this matter, let alone its mere existence. With the help of a chemist and an artist I have reconstructed this technique as shown in my *Mémoire sur la peinture à l'encaustique et sur la peinture à la cire* (Paris: Pissot; 1755), but it has been despised by many learned persons.[42: p. 152] In other matters as well, the antiquarian should work like a chemist or a natural historian, and in the *Recueil* you may find examples of collaboration between them and myself. Likewise, the insights of practising artists can be relevant to antiquarians.

I have always been aware of my double approach to the arts: stimulating, criticising, and appreciating modern art as interconnected with the arts of the Ancients. To me, there is no clear distinction between them, and consequently we must consider the old cultures as exempla for our young artists. I take the opportunity to mention that in various treatises I have made observations on the practical adoption of antiquity, for instance by choosing ancient myth and history rather than genre and later history, because ancient arguments are strongly comforting and instructive. So, I published *Tableaux tirées de l'Iliade, de l'Odyssée d'Homère et de l'Eneide de Virgile* (Paris: Tilliard; 1757),[25] to 'the advancement of painting by the union with the poets of Antiquity.'[19] The noble characters as well as the adventures of the heroes surpass all those portrayed by poets like Dante, Tasso, Ariosto, and Camoens.

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17 1: III, p. 141 ad pl. XXXVI, no. 5, a small bust of Thales from the Villa of the Papyri : On ne sçait trop dans quelle classe on doit ranger les monumens d'Herculanum : cette ville est, en quelque sorte, amphibie pour les antiquaires.

18 1: VII, p. 236 : Un monument qui ne nous apprend rien est médiocrement important, il ne satisfait qu'une petite parte d'une curiosité qui ne peut s'étendre qu'à la beauté, & aux détails de sa forme & de son travail.

19 Tableaux, p. X: l'avantage de la peinture par l'union avec les poètes de l'antiquité. See 5: p. 214-215.

My dear Winckelmann, you surely are a much more systematic thinker than I aim to be. The small first essay and subsequent works, up to your recently published (1760) *Descriptions des pierres gravées du feu Baron de Stosch*, show a wide array of approaches, and now that you are based in Rome, you can study the works of art in their proper environment. Lucky you! But do not neglect less elevated products of artists or craftsmen. Not only marble, but ceramics, glass, bronze, and iron are materials in which the ancients wrought their precious material culture, and those we may be enjoying each day of our life.

'Sir, I embrace you wholeheartedly, and I assure you how much I have the honour to be your very humble and very obeying servant. CAYLUS'[13: p. 5]

Letter from Johann Joachim Winckelmann to the Count of Caylus

Rome, Fall or Winter 1760

HochEdelgebohrner hochzuehrnder Herr,[26: I, p. 159]**, Hochgebohrner Graf,**[26: II, p. 246]

Many thanks for your kind letter which brings us together in the land of literati and studiosi. Thanks to our mutual friend Paciaudi for connecting us indeed! To start with a compliment in return: I have always admired your basic and extremely innovative distinction of the four great cultures of Antiquity. You deserve 'a statue on the Pont Neuf, with an inscription VIRO IMMORTALI. We have lost the seed of these men.'[20]

I read early specimens of your work in Dresden and mentioned them in the sequel to my first work, the *Sendschreiben* and *Erläuterungen* to the *Gedancken*, where I complain about the neglect they experience under artists.[10: p. 66] Of course, other treatises, but especially your grandiose *Recueil*, have not escaped my attention.[9: p. 207-208; p. 236-237] I have a good memory for

[20] 26: III, p. 136 (letter 743 to Paciaudi, 8 November 1765): Il Comte de Caylus meriterebbe una Statua su le Pont Neuf, coll'inscr. VIRO IMMORTALI. Si è perso il seme di quegli uomini. It might be an ironical remark due to Winckelmann's acid reactions to many colleagues (so Rehm in comment at p. 457).

what I have read, strengthened by the habit to compile publications in notebooks, often with long quotations, which originated in the simple fact that I could not afford the acquisition of these books. In Rome I still make such excerpts, of notes in some of your volumes (figs 13-14).[1: I, p. 507, pl. LXXXIX][27: p. 139-143, fig. 8]

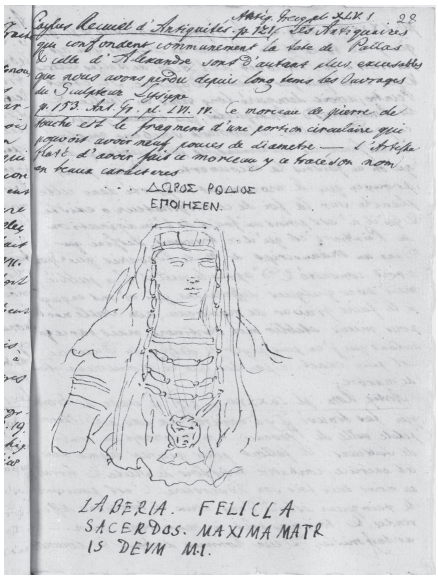

Fig. 13. J.J. Winckelmann, page from his Excerpts with notes taken from Caylus' Recueil, volume I. Paris, Bibliothèque Nationale, 'Manuscript Allemand' volume 67, fol. 28: relief of a priest of Magna Mater, Rome, Capitoline Museum, inv. 1207 (photo Bibliothèque Nationale).

Fig. 14. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines I, Paris 1752, pl. LXXXIV: relief of a priest of Magna Mater, Rome, Capitoline Museum, inv. 1207. Amsterdam, Allard Pierson (courtesy Museum).

Like you I try to work with objects I have seen 'with my own eyes'. In several publications and letters, I have deplored the observations made by those who think they can permit themselves a judgement based on a text or an illustration. You are careful in your observations and descriptions and do not want to deduce too much. You repeatedly use as a motto *'j'ignore*, - this word to which self-love pays such a high price; this word, not only honest in itself but a compliment to those who set the truth in the first rank

of the Gods.'[21] And rightly so. You are 'the first to be hailed for having opened the road to enter into the topic of style in the arts of ancient peoples.'[22] I admire the copious apparatus of images, often more telling than phrases, but think that exact wording of the texts explains the history of art even better: the reader cannot be detracted by images and has to study the text closely.[21: p. 44-46] I am not a collector, apart from some small things for my personal amusement, since I have daily access to the grandiose collections that Rome is so rich in.

One of your principal findings, indeed, is the establishment of four basic ancient cultures. You have similar paradigms to explain their characteristics, like simplicity, and rely on the principle of government and climate. However, in contrast with you, I think that the basic rules you briefly formulate in the Prefaces and the Avant-Propos to the Sections on each nation in each volume should be worked out into a theoretical model applicable to many more objects than you (by thousands) and I (by hundreds) describe or explore personally. I must confess that in my view most objects you use are too mundane and insignificant to fathom the real quality of ancient art. Indeed, here I disagree with you, and I see the need to limit myself to higher arts, as you – rightly – have deduced from the two recent essays you mention and quote. Such a learning construct or *Lehrgebäude*[15: p. X/XVI] should serve as a sound basis for the explanation and interpretation of the genesis of ancient art. It is to those rules that ultimately also your guenilles adhere! Here I see a flaw in your approach. By sticking to the objects themselves, you do not acquire a higher view and insight, although the many comments made include, in themselves, facts and suggestions of great importance. They remain hidden pearls within the heavy oyster shells of the book covers of the huge *Recueil* volumes.

I would like to conclude about your work that 'many people have embellished the science of antiquities but very few have gone in-depth, because one thing is incomparably more difficult and riskier than the other. We are

21 1: VI, p. vii: ce mot j'ignore, - ce mot qui coûte si cher à l'amour-propre; ce mot, non-seulement honnête en lui-même, mais flatteur pour celui qui place la vérité dans le premier rang des Dieux.

22 26: I, p. 394 (letter 224 to Lodovico Bianconi, 22 July 1758; Annotazioni sopra la Raccolta d'Antichità del Sigre Conte Caylus I): il primo a cui tocco la gloria d'essersi incaminato per entrare nella sostanza dello stile dell'Arte de' Popoli Antichi. But in the fictitious letter Winckelmann leaves out the subsequent phrase: Ma volerlo fare a Parigi è un impegno assai più superiore dell'assunto (but the wish to do this in Paris is an endeavor far beyond the assumption). In what follows he criticizes Caylus for a false estimation of an Egyptianizing statue from Tivoli (1: II, p. 110-117, pl. XXXIX), now in the Louvre, and a misunderstanding of all ancient figured vases as 'Etruscan'.

extremely grateful to you, having treated them so seriously. If the multitude of objects you have treated has impeded you to excavate much deeper, in any case it has always shaped the desire that people very well illuminated in Architecture and Antiquity should verify and study in greater depth the various monuments you cite in your memoirs.'[23]

Collaboration with artists can be fine, but their principles should be based on what for me is the fundamental starting point, the absolute uniqueness of the Greeks. My friend Anton Raphael Mengs, like before him Raffaello and Poussin, respects the rules of noble simplicity, in contrast with popular artists like Bernini, who was not but a 'Kunstverderber'.[14: p. 5] Mengs invented a new artistic concept and follows me in the appreciation of the Greeks (fig. 15).

So did especially Raffaello, 'an artist endowed with personal beauty, with sensibility of Beauty, with spirit and knowledge of Antiquity.'[24] In stark contrast with your country full of Rococo painters. How dreadful! I take the liberty to refer to my essay on the fine contour and grace in *Von der Grazie in Werken der Kunst*, in which I hope to have made clear that grace can be a natural inclination, as it was in Greece, but can also be trained by proper learning and reflection.[14: p. 9-14][28] Maybe superfluous to recall that I had good masters for that matter, especially the Earl of Shaftesbury.[9: p. 188][27: p. 90-93] So, there is no other culture so paramount as is that of the Greeks. There we see true and noble simplicity, not in the trinkets of the *Recueil*. Excuse my being so harsh, but I cannot but stress this point: noble art is high art. My remarks on imitation you seem to have misunderstood: 'I contrast aping [Nachmachung] with independent thinking, not imitation [Nachahmung]: for me, the first is a slavish following, the latter implies that the imitated object, if done with spirit, can acquire another nature, so to say, and become something independent.'[25] All this regards beauty,

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23 26: III, p. 347 (letter 925 to Charles-Louis Clérisseau, at some date in 1767: Assez de gens ont effleuré la science des antiquités, mais très-peu l'ont approfondie, parce que l'un est incomparablement plus difficile et plus pénible que l'autre. Om a beaucoup d'obligation sans doute au Comte de Caylus de s'en être occupé assez sérieusement. Si la multiplicité des objets qu'il a traité l'a empêché de les fouiller plus avant ; au moins a-t-il toujours formé le souhait que des gens très-éclairés dans l'Architecture et dans l'Antiquité allassent vérifier et détailler les différens monumens qu'il cite dans ses mémoires.

24 14: p. 6: ein Künstler, mit persönlicher Schönheit, mit Empfindung des Schönen, mit Geist und Kenntniß des Alterthums begabet.

25 14: p. 4: Gegen das eigene Denken setze ich das Nachmachen, nicht die Nachahmung: unter jenem verstehe ich die knechtische Folge; in dieser aber kann das Nachgeahmete, wenn es mit Vernunft geführet wird, gleichsam eine andere Natur annehmen und etwas Eigenes werden.

Fig. 15. Anton Raphael Mengs, The Parnassus. Oil on panel, ca 1761. Copy of a ceiling fresco in the Villa Albani in Rome. S. Petersburg, Hermitage (Courtesy H*Art Museum, Amsterdam).

which is acquired by sampling the best parts of models rather than copying one item in its entirety, its strong and weak parts included. Take as proofs, objects you have also studied: coins, cameos, and gems, which show heads in profile of the most exquisite forms….

This brings me to your thesis of interconnectedness. As I understand it, you see the Greek nation as the highest Culture emblematic for us. But you do not see it as the unique power we should not but take as our mother. Its position is so elevated that surely it had no need of impulses from outside, even if these belonged to the same area. The result of your attributions of objects to, first, one nation and then, within it as showing external elements seems unnatural to me. My objection is that it neglects the superiority of the Greeks. Admittedly, they were later than the Egyptians and much in their earliest human figuration is 'similar'. Yet, 'among the Greeks, art has started, although much later than in the oriental countries, with simplicity, so that they, relying on what they themselves relate, have taken the first seed for their Art from no other nation, but might seem to be the first

inventors'.[26] And let us not forget Egypt's isolation, the 'aversion of this nation against all strange things, especially Greek customs.'[27] That does not particularly plead for travel contacts between Greeks, the East, and even Etruria. For me, 'the history of Art of the Egyptians is, based on the character of their country, like a large Sahara-like plain that one can oversee from two or three high towers.'[28]

As to the Etruscans, I agree with you that they were negatively affected by sorcery and fear of their gods. Their culture was lost under the Romans. And with you, 'I have to complain about our deficient knowledge which cannot always attempt to distinguish things Etruscan from the oldest Greek ones.' We have too little to compile a 'system of their art.'[29] Yet, I hope to work out my ideas on this people shortly and demonstrate a subdivision into three subsequent styles, like those of the adjacent nations.[15: 104-114/166-176]

Even if we encounter Egyptian treats in Greece, these should not be seen as signs of transfer or active adaptation, but they serve as the presence and tolerance of foreign cults within the liberal society that Greece was. As to Rome, depraved as it was due to bad and tyrannical government, here we see a decay in which the arrival of other cultures than the Greek proved obnoxious, not to say detrimental.

On the next occasion, we might discuss the importance of Greek art (again, excuse me for excluding arts of other nations) in our days. In Rome I see the happy examples of my friend Mengs, but also others as mediator. And if I am not mistaken, you have given important stimuli to young French artists regarding the choice of themes as well as style. Our nations seem more open for the positive influences of the Greeks than other ones.

'Your very humble and very obedient servant, Winckelmann'[30]

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26 15: p. 9/14: ähnlich; p. 5/8: Bey den Griechen hat die Kunst, ob gleich viel später, als in den Morgenländern, mit einer Einfalt ihren Anfang genommen, daß sie, aus dem was sie selbst berichten, von keinem anderen Volke den ersten Saamen zu ihrer Kunst geholet, sondern die ersten Erfinder scheinen können.

27 15: p. 35/60: Abscheu dieses Volkes gegen alles fremde, sonderlich Griechische Gebräuche.

28 15: p. 68/110: Die Geschichte der Kunst der Aegypter ist, nach Art des Landes derselben, wie eine große verödete Ebene, welche man aber von zween oder drey hohen Thürmen übersehen kann.

29 15: p. 91/150: Ich muß aber hier unsere mangelhafte Kenntniß beklagen, die sich nicht allezeit wagen kann, das Hetrurische von dem ältesten Griechischen zu unterscheiden. P. 125/208: Systema ihrer Kunst. See also Das dritte Capitel. Von der Kunst unter den Hetruriern, und unter ihren Nachbarn [15: p. 81/132].

30 E.g., 26: I, p. 230 (letter 147 to Bianconi), p. 243 (letter 157 to Bianconi); II, p. 145 (letter 408 to Barthélemy): Votre tres humble et tres obeisant / Serviteur / Winckelmann.

Discussion of the Content of the Unknown Letters

The two letters show some of the main principles of the two pioneers from our field, who, at the same time, stood in a vivid interaction with other scholars from various disciplines. Caylus corresponded with people like Paciaudi in Italy and Esprit Calvet in France[12] who helped him to acquire objects and gave him information on these and other matters, but we do not find an explicit exchange of ideas. Winckelmann's correspondence – much better known thanks to the still exemplary edition of Walther Rehm and Hans Diepolder from the 1950s and the recent Italian translation by Maria Fancelli and Roselita Raspi Serra[26][29] – contains sketches of texts to be included in one of his forthcoming publications, about which the receivers of the letters could give their opinion, but whether Winckelmann enticed dialogues, is not clear either. More than Caylus, he had multiple opportunities to discuss learned matters with his peers in Rome as well as the foreign visitors, grand-tourists and scholars alike. For Caylus the discussion-platforms consisted of the members of the two academies he was enrolled in and the visitors of the Monday Salon of Marie-Thérèse Rodet Geoffrin.[5: p. 60-63]

Caylus' contribution to the new debate on ancient art, its genesis, development, and impact consists of the clear subdivision of the ancient world of the Mediterranean into four main cultures, whereas he recognizes Persians, Phoenicians, and small nations of 'aboriginals' in Italy as predecessors and contemporaries of the Etruscans. The distinction is based on a second novelty, taken over and worked out by Winckelmann, that is the distinction of 'manières', 'goûts', or 'styles' recognizable in the objects studied. Winckelmann refined this coarse framework and introduced the model of beginnings, rise, flourishment, and decay, and distinguished chronological phases.[9: p. 231-234] Like Caylus he includes adjacent nations like Persians, Phoenician, and Italian indigenous peoples in his deliberations.

Caylus' third novelty is the attention paid to the technical aspects of ancient objects. In his *Recueil* and other texts we observe sections on reconstructions of production processes which are instrumental for the distinction in nations he creates. Like Diderot, Caylus displays a similar fascination for production. The *Encyclopédie* contains, as we know, many descriptions and depictions of 'métiers', but does not usually link them to historical developments. Diderot and archaeology, however, has got some more atten-

tion most recently, and the failing understanding of Caylus' achievements have been assessed.[42] Winckelmann also writes about that matter and links his observations to the classes of material but he was not experiencing with material and technique nor inviting physicists or artists to reconstruct ancient fabrication procedures. Caylus' first biographer Samuel Rocheblave probably goes too far by saying that Winckelmann copied Caylus' observations too easily without quoting him, but a precise comparison between the two texts corpuses might help us.[31]

In Paris, Caylus was ridiculed as an 'amateur' by Diderot and others,[19: p. 233-234][31: p. 69][42: p. 152 and passim] but we do not know whether he felt really offended or proudly went his own way, ignoring them. Even if Diderot argued against Caylus because of his limited view,[30] both display a similar fascination for production. The *Encyclopédie* contains, as we know, many descriptions and depictions of 'métiers', but does not usually link them to historical developments. Caylus must have known them, although he does not cite them in his work.

While both protagonists of this study admired Greek culture as the greatest in the ancient world, the deepest abyss between Caylus and Winckelmann is the question of intercultural influence and agency: for Caylus a principle, for Winckelmann an anathema.[32: p. 140-142] With his accentuated ranking of one culture above all others on the basis of the country's societal qualities and other amenities, Winckelmann stimulated a canonisation of Greek art as the acme of ancient civilization. For Caylus, Greek art and literature might inspire modern artists to choose classical themes and to use a classic-like style. For Winckelmann, this was true as well, whereas he also saw Greek art as edifying our modern spirit.

For both, the selection of canonical works of art, literature, philosophy, and even the 'Seven Wonders', as essential constituents of ancient civilisations go back to Greek and Roman times, whereas other cultures also selected works they wanted to single out, like books of the Bible. It has good and bad effects. Caylus and Winckelmann felt sure about the pre-eminence of the Greeks, choices which have influenced the dominance of that culture within classical studies and in society alike.[33]

31 5: p. 342: C'est à chaque page, presque à chaque phrase, qu'on devrait être renvoyé au Recueil ou aux Mémoires sur le travail du bois, de la pierre, du marbre, du porphyre, sur la gravure en creux et en relief, sur les pâtes de verre, sur les opérations de la fonte, de la soudure, sur le fer, le bronze, et tous les métaux en général.

The open borders of Caylus' construct may appeal to modern students of ancient civilizations. The traditional – maybe even Winckelmannian – distinction of 'things Egyptian', 'things Greek', 'things Roman', and so on, does no longer satisfy us, because the purity of a national art, or other cultural products, seems more remote than ever.[34: p. 29-53, 72-80] Yet Winckelmann's distinctions are as little sign of nationalism or patriotism as Caylus' open categories are a sign of its absence. After all, Caylus expresses many more times his close adherence to his Sovereign and his patria, in close conformity to the obligations of his familial and cultural background as a member of the highest level of nobility! For Caylus the ancient world shows a vivid interconnectedness, without strong borderlines, as is shown by correspondences in style and production. If we may adopt a modern view, Caylus adheres to the notion of connectivity, networks, globalisation, and even in some cases, to global archaeology.[35]

Fig. 16. Nemrud Dag, Hierothesion of Antiochus of Commagenene, ca 50 BCE, eastern terrace with statues of the king (left) in company of Commagene, Zeus, Apollo, and Heracles (photo M.J. Versluys, 2021).

I give an example of this model based on a project I have worked on around 2000, that is the *hierothesion* of Nemrud Dağ in eastern Anatolia (fig. 16). My project partner Miguel John Versluys' elaboration of our discussions resulted in a fine study of intercultural relationships and stylistic properties that traditionally were seen as strange, barbarous, or eclectic (in the negative sense of the word). By contrast, he showed them to be illustrative of the large networks and the varied impulses which shaped the outlay of the sanctuary and the representations of gods and kings on the two platforms of this partly man-made tumulus. This and other monuments in Commagene are the result of implementation or bricolage of stylistic and iconographical input from a much more globalized and much larger area than that of Greece vs. Armenia, Persia, or Parthian. In his monograph dedicated to these sites, Versluys makes clear how these interactions work and gives a couple of examples from Republican Rome to strengthen his thesis.[36] If I may further apply this and other modern theories about the existence of a global ancient world to our two protagonists, we can conclude as follows. Caylus, I think, would have liked this approach, not hindered by the straitjacket of sublimity of one culture (i.e. Greek) in respect to another. In many discussions in his *Recueil* he hesitates about a precise articulation and, even if he places objects within one of his four nations, he often makes clear that boundaries are not as strict as we may think. For Winckelmann, this tolerance testifies to the weakness of Caylus' model (if it is a model at all) built upon a heap of badly arranged objects rather than on the afore-mentioned *Lehrgebäude*. Apart from that, he seems blind to the qualities and energies of non-Greek cultures as influential. Top quality cannot be inquinated by mediocre or bad quality, and for him the borders are kept closed. However, again, here we should keep in mind that Winckelmann also opens the door for associating art from adjacent cultures with that of Greece.[9: p. 231-233]

The 'global' aspect comprises a connection between an external and an internal factor in a making process or a cultural phenomenon. Let me take an example Caylus proposes in the first volume of his Recueil, viz. a cylindrical seal with a frieze of bearded men accompanied by a text in [cuneiform] script in his possession apparently found in Egypt (figs 17-18).[1: I, pl. 18][22: p. 9-10, fig. 4] The material, lapis lazuli, would be Egyptian, the beards and text however were Persian. This is no wonder, since 'we should observe that the Persians have been masters of Egypt for 135 years and that during this time span they have adopted various customs of the People subjected by them, having also preferably employed workmen of this nation.' As to the

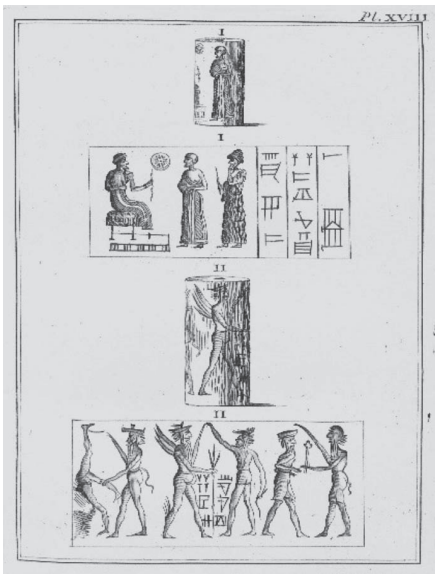

Fig. 17. Comte de Caylus, Recueil des antiquités égyptiennes, étrusques, grecques et romaines I, Paris 1752, plate XVIII: cylinder seals ascribed to the Persians. Amsterdam, Allard Pierson (Courtesy Museum).

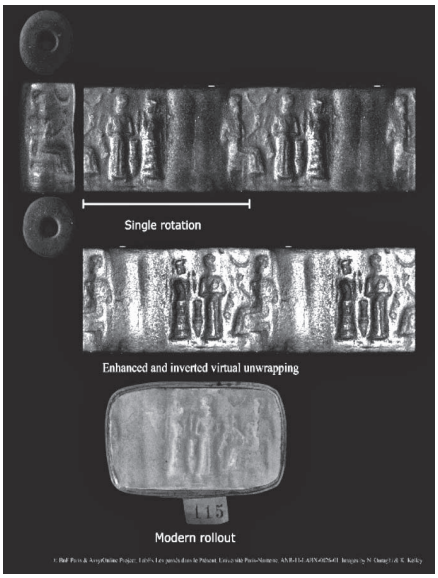

Fig. 18. Paris, Bibliothèque Nationale, Cabinet des médailles, Amorite cylinder seal from the collection of Caylus, ca. 2100-2000 BCE ("CDLI Seals 009342 (Physical) Artifact Entry." (2015) 2023. Cuneiform Digital Library Initiative (CDLI). September 23, 2023. https://cdli.ucla.edu/P476083.)

hieroglyphs, 'I am far from ascribing them to the Persians'. In which direction agency went, from Persia to Egypt or vice versa, 'whatever opinion one follows, the result is that between these two Peoples there has existed a communication, either of usages, or of cult, and a forteriori, of superstitious practices.'[32] Yet, in reality we now know that the object is an Amorite or Akkadian seal, some 1.500 years older than the period of Persian occupation.[22] It then becomes a mystery how this object could really originate from Egypt. In a personal communication Wouter Henkelman has suggested that the seal was among antiquities and curiosities travelling in commerce throughout the Ottoman Empire. The provenance, in that case, would be 'the bazar in Cai-

[32] 1: I, p. 55, on a seal stone of lapis lazuli, pl. XVIII.1: il faut observer que les Perses ont été maîtres de l'Egypte pendant 135 ans ; que dans cet intervalle de temps ils ont adopté plusieurs usages du Peuple, qu'ils avoient soûmis, & ont employé par préférence des ouvriers de cette nation. [..] hieroglyphs 'que je suis bien éloigné de rapporter aux Perses. […]. P. 56 Quelque parti que l'on prenne, il en résultera toujours qu'il y avoit eu entre les deux Peuples une communication, soit d'usages, soit de culte, & à plus forte raison, de pratiques superstitieuses.

ro'. Whatever it may be, for Caylus this and other 'Persian' objects testified to a 'bi-directional exchange',[22: p. 10] which he also recognized in the monumental architecture of both nations. We may add that it might also have something to do with the often-neglected spread of Persian culture in the area west of Iran, now seen as Persianism.[37][38] Winckelmann quotes Caylus' publication and seems to consent with his suggestion.[15, p. 73-74; commentary, p. 72-73]

Winckelmann seems to have struggled with the stemma of four cultures and their possible interdependence. From the outset, he declares the Greeks superior to all, but in his first essays he does not yet close the borders entirely. He doubts, however, his own attribution of the three Herculanean women in the collection of the King of Saxony as Greek, after being very positive about that assumption in the *Gedancken* (fig. 19). 'Our understanding very often fails to lead us to things which should be obvious.'[33] *In the Geschichte der Kunst*,

Fig. 19. Dresden, Antikensammlung, the three 'Herculanean Women', found around 1711 in Herculaneum (© Skulpturensammlung, Staatliche Kunstsammlungen Dresden. Foto: Herbert Boswank).

[33] 10: p. 584: Unser Verstand bringt uns sehr oft nicht auf Sachen, die uns natürlich einfallen sollten. Reply to Gedancken [10: p. 64]: In diesem Theil der Kunst sind sie alle drey, sonderlich aber diejenige, welche grösser ist als die Natur, der Farnesischen Flora und anderen Griechischen Wercken vom ersten Range beyzusetzen.

Winckelmann is very explicit, as we have seen in his letter: he does not see exchanges between Egypt and Greece at all, probably since the Egyptians developed their arts very slowly, which display less distinct stylistic phases from 'primitive' to fully 'realistic' than the Greeks. In this way, he cannot explain the correspondences he (also) observes between the style of Egyptian and Greek sculpture in their earliest phases, e.g., stiffness and 'primitivity'. There Caylus proposes a more likely model which aligns with the concept of globalization.[39][40] Clearly, Winckelmann sees the alleged absence of quality in all nations but the Greek as a reason to not observe any form of connectivity. And in his own reaction to the *Gedancken*, he replies as an imaginary reader to its author (himself!) that one may wonder about the numerous 'Fehler' made by Greek artists being contrary to the alleged perfection.

When Winckelmann stresses the Greeks' uniqueness and expansion of the quality of the arts, he observes that, when they travel farther away from their homeland to found new colonies, the danger exist that they take over strange local habitudes like praying to monkeys on the island of Ischia, formerly called Pithekoussai.[10: p. 122]

Conclusion

Both Caylus and Winckelmann are founding fathers of the study of classical archaeology as a historical discipline. They tried to explain four of the ancient 'nations', Egypt, Etruria, Greece, and Rome as seminal for the development of civilization and inquired their qualities and flaws, as well as their peculiar properties. For Caylus, the study of as numerous objects as possible, mostly humble and often fragmentary, should be accompanied by technical analyses, whereas factors like style and iconography as well as inscriptions were further important aspects to acquire a better understanding. He observed many correspondences between the four cultures as well as other adjacent and/or contemporary cultures thanks to 'commerce' and 'communication' and adopted, of course without knowing this theory, the model of globalization. Things were barely 'pure' products of one nation. Both scholars would agree on one of Caylus' observations [see motto]: 'By examining the precious remains of the Ancients, one may formulate a sound idea about their taste [goût]. The Arts bear the character of the Nations that cultivated them; one unravels their beginnings, their infancy,

their development and the point of perfection, to which they were brought among all Peoples. One does not better distinguish the genius of these peoples, their customs, the movement of their spirit, if one may say so, in the Books they have left to us, than in the works of Sculpture and Painting which have come to us. […] But nothing is comparable to the satisfaction of expecting a public utility.'

However, in contrast, Winckelmann introduced and never left the model of a superior Greek culture, barely (or even never) influenced by other cultures in its neighbourhood. His theoretical model included elements we find in Caylus' work, but he fleshed out these elements into a more systematic and succinct model. Style depended on genius (or the lack of it) and related to other cultural assets, like literature and lawgiving. Aesthetics were, in his view, at the core of art making, for which reason he abhorred from Caylus' approach. Without fairly admitting it, however, Winckelmann took over glimpses from his competitor's non-existing model.

It is a pity the two men never met. Both had a libertine and open spirit, were queer thinkers, against the rules and standards of their days. And even if a count is not an abbé, they might have come to a better understanding if their literary correspondence in the Republic of Letters could have come into flourishing.

Acknowledgements and explanatory remarks

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This text is based on a reading of the original texts of the authors involved in this study: Winckelmann's letters, *Geschichte der Kunst*, and various briefer papers, and the 'Préfaces' and 'Avant-Propos' as well as a selected number of plate descriptions in the seven tomes of Caylus' *Recueil des Antiquités* and his letters to Paciaudi. Secondary literature has been taken into account to a certain degree, but further studies may follow, in order to deepen these reflections and to do justice to the vast and often dense scholarship, in which that on Winckelmann is by far dominant.

For Caylus, there is an fine website: http://caylus-recueil.huma-num.fr/ (most recently accessed 13 February 2024). Winckelmann's work has been published in an excellent edition Schriften und Nachlaß.

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Laudatio Adriaan Linters

Maarten Sabbe.

Industrial heritage falls somehow between two stools: is it a matter for historians, archaeologists or engineers? Even within the heritage community, it often falls into the category of 'ugly duckling'; organise a retrospective on the work of the Van Eyck brothers and tickets sell out quickly; open a new factory and dignitaries are in the front row for the ceremonial ribbon cutting. But an old factory site where a revolutionary industrial process was fine-tuned years and years ago gets far less attention. Today, 'urban explorers' have given old industrial sites an aura of street credibility, but they often focus more on the adventure and nostalgic aesthetics of a dilapidated site than on its heritage value.

Of course, we in Ghent are not badly endowed in terms of attention for industrial heritage, including the Industriemuseum, the Ghent University Museum, which can still be described as 'new', a centre of expertise like ETWIE, and, let's face it, quite a few repurposed buildings of our own university, such as the former 'Technische Laboratoria' of our faculty in the Technicum, and the old boiler room that was successfully converted to house student organizations. Many other regions also have museums dedicated to industrial heritage, and successfully addressed its touristic potential, but the memory displayed there is usually selective. The slogan of Faro, the Flemish cultural heritage support centre, states that 'tomorrow's heritage is created today'. What happens to an old machine that was revolutionary at the time when a company closes or renews its machinery? For engineers, it usually cannot be new enough, and they are usually well aware of the price of old iron. Historians focus on the 'paper trail' around the case, and archaeologists usually only get involved at a much later stage – forgive me the typical engineering approximation to reality. So who

checks whether something has heritage value, and then stands up for its preservation in one way or another? That's when you end up with someone like Adriaan Linters. I could certainly name more names, many of whom are here today, but Adriaan stands out in several ways.

Adriaan is a maverick, standing up for what a lot of people find worthless. He is also a maverick in this faculty's line of Sarton medallists: Adriaan is a historian, where engineers usually nominate engineers. If it may be of consolation to colleagues within the faculty: judging by Adriaan's love of science and engineering, he might just as well have become an engineer, but he took a different path. After studying history and a postgraduate degree in urban planning - at our faculty, incidentally - he spent several years as a scientific collaborator, both inside and outside the university. He then held several positions within Monument Conservation and actors of industrial heritage, as well as several lecturing positions at home and abroad. I will pass over the full listing of his positions, which runs over two pages. This being said, there is something that Adriaan does not have: a PhD. Most Sarton medallists, usually being academics, are lecturers or senior research staff with a PhD. Colleagues all know that there are 3 types of graduate students: first there are graduate students who cannot start a PhD, then there are graduate students who can and want to start PhD research, and finally there are graduate students who could obtain a PhD but feel a calling to go elsewhere. Adriaan deliberately did not opt for a PhD, because a life in the field - and, as he likes to declare himself, "with dirty hands and rubber boots" – had a higher appeal to him. We can safely describe him as an activist: he has done excellent work of descriptive nature and a whole list of publications on industrial heritage, but he prefers to be on the barricades fighting for its preservation.

His efforts can only be admired, but can we reconcile his efforts with the common discourse on Sarton medals? The discussion regarding the 'ivory tower' and the perception of the unworldliness of the academic world is, of course, an old story. Fortunately, we have every year a new generation of energetic younglings arriving, which keep challenging our thinking. For instance, a lot of younger researchers - especially from alpha faculties - are making a case for academics to be more activist, today's view on how to deal with the tension between theory and practice, and between university and world. In beta faculties like ours, an activist attitude is less common - unless we were to include spin-offs. If we are open to a somewhat more

activist discourse, it suddenly becomes evident to nominate someone like Adriaan Linters for the Sarton Medal, who fought for what we engineers could have fought for ourselves.

Let us hope that this Sarton Medal can not only contribute to the preservation of industrial heritage in all its forms, but also instil in our students, and by extension society, a little more pride in what has been achieved industrially in our regions in the past. If you ask Joe Average, "Jan met de (Gentse) pet", what we can be proud of in terms of Ghent's industrial past, they usually mention the industrial espionage of Lieven Bauwens, who managed to smuggle the Mule Jenny, which revolutionised cotton spinning, to our regions. We apparently teach young people that we should be proud of what we did not invent ourselves. This is disappointing, since there are so many things that can be described as industrially revolutionary that have been developed in our region or by emigrant Belgians. Some names, like Leo Baekelandt, are regularly mentioned - I focus on my own field of industrial chemistry. But you rarely hear other names, even when linked with processes that were pioneering at the time and are so performant they are still in use today. Ernest Solvay developed the first 'sustainable' and rather harmless process to produce soda (sodium carbonate), a substance of wide industrial interest. When I teach about the complexities of applying enamel to steel, students hardly believe that 'French' classics like Le Creuset were founded by 2 Belgians. My students are surprised, every year over, when I try to explain how many things were developed in our region that we use to this day. In, say, Germany, things are completely different; figures like Fritz Haber and Carl Bosch, the inventors of ammonia synthesis and, by extension, the fertiliser industry, are close to being declared national heroes. Several versions of the first chemical reactors used for this purpose have been preserved and are exhibited as 'statues', and entire research institutes bear their names - and that despite Habers' contribution to the development of war gases like mustard gas. Visit an institution like the Deutsches Museum in Munich, and you get the impression that the authorities want to instil a love of technology and its historical development in everyone. It is a kind of Louvre for engineering and science, right down to reconstructed mining galleries in the basement to show old mining techniques and their gradual improvements. It is swarming with people on weekends, lots of young people too. The contrast is stark.

Engineers mainly look to the future. That is allowed, there is no need for us to wallow in nostalgic hindsight. However, the future is partly shaped by our past, a past we can learn from, and where a certain pride in past achievements is not out of place. Traditionally, there has been relatively little focus on that; engineers learn primarily economic and market-oriented thinking, and the curriculum is already so vast that it is actually far too abundant to teach in 4 or 5 years. But there is certainly hope. At the "Industriemuseum", 39% of visitors in 2022 were under 26, published figures showed, and at the GUM as many as 46%. Industrial heritage and its consequences have entered the canon of Flanders, with lemmas on, among others, the Mule Jenny, multicultural mining communities, the development of the contraceptive pill, and steel production in Flanders. Attention to sustainability forces us to think about things like the repurposing of existing buildings, particularly the overdimensionalized industrial cathedrals of yesteryear, and some old industrial practices, some of which have been environmentally disastrous but just as well some that were more sustainable than today's alternatives.

Adriaan Linters does not do academic research under the form we usually practise, but it may be clear that he has dedicated his life's work to the preservation, description and promotion of industrial heritage in all its forms, and has used his energies to enthuse young people, students and society. As an engineer, and as a scientist in general, it is a privilege to nominate Adriaan for a Sarton Medal of the Faculty of Engineering and Architecture for these relentless efforts.

The heritage of dirty hands : study, conservation and accessibility of industrial heritage in Flanders.

Adriaan Linters.

The first steps in Flanders of industrial archaeology, the interest for the material heritage that bears witness to the development of industry and technology, originated in the early 1970s. In the course of the past decades, numerous volunteers, the 'non-paid professionals', dedicated themselves to the study, preservation, interpretation and preservation of that heritage.

Without the efforts of so many, the remaining traces of our industrial past would be poor. Or to quote Churchill during the Battle of Britain, *"Never was so much owed by so many to so few"*.[1]

The commitment of motivated volunteers was and is at the heart of the movement not only in Flanders, but also in just about every other European country.

A. Introduction

I will refer several times in this contribution to the situation and developments in Catalonia, where we have built good contacts with colleagues since 1989. It is an autonomous region of just under 8 million inhabitants, comparable to the Flemish Region with some 7 million. Both regions experienced a growth in autonomy and the importance of their own institutions

[1] *'Never in the field of human conflict was so much owed by so many to so few,'* In his speech to the House of Commons, 20 August 1940.

from the mid-1970s. Flemish politicians look at Catalonia a lot, but are not always aware of the value Catalans place on their culture and heritage - and from there on their identity.

The Catalan constitution, the Catalan Estatut (2006) states in its art. 22§1: *'Totes les persones denen el deure de respectar i preservar el patrimoni cultural'* (Everyone has the duty to respect and preserve the cultural heritage)

This will not be an 'academic' article, but a plea, a looking back, looking at where we are now, and looking where we (can) go. It will not be a defence, not an indictment, not a condemnation. Such, by the way, is not the historian's job or role.

The contribution aims to start as much as possible from practice, and experiences gained from there. In the course of my activities, I soon found that within the heritage world, and certainly within the world of industrial heritage, there were more fascinating and important things to do in the 'field' and that this should and must be given priority. The first thing I was told when, youthful and interested, I arrived Britain in the early 1970s was *'The first thing an industrial archaeologist needs is a pair of gum boots'*.

Theory follows practice, you learn by doing. A good surgeon does not learn his trade from books either.

Industrial archaeology was a strange phenomenon in its early years, unknown not only in the scientific world but also among citizens, organisations and associations who often lived next door to the relics.

In the 1970s and 1980s, the subject had to be publicised. At that time, 'serious' archaeologists were concerned with the traces of prehistory and classical antiquity. Medieval archaeology was something 'new', post-medieval archaeology was non-existent. 'Industrial archaeology' was viewed as 'strange' to say the least.

The pioneers went out into the countryside to raise awareness, make the topic and its importance known. To do that, you don't just give lectures at high-profile conferences. In *illo tempore*, you toured local halls and auditoriums with a 16 mm film projector and a slide projector. The film projector was replaced by a video device, and even that has become industrial heritage today.

I then toured all kinds of local heritage associations, cultural and parish centres, cultural funds and training organisations, organisations of business executives and sometimes service clubs. Lectures to engineering societies, however, were rare.

The advantage of that travelling around is that you gain a lot of experience. From the communist militant who still fought in the Spanish Civil War who tells the stories from the Carels steam and diesel engine production plant in Ghent. The brewer and distiller who enthusiastically initiate you into their practice - tasting included. The ex-miners-volunteers who save the heritage in Beringen and Waterschei with little means and set up a little museum there - and who tell you about working underground. Unfortunately, it was a time when oral history was not yet part of the pleasures and when recording equipment (the famous Nagra) was more towed than portable and the Flemish broadcasting VRT had to set out with a crew of six to make a report.

History is bunk

'History is bunk' said Henry Ford. And while one Ford T after another left the assembly line, he created in Dearborn, Michigan, one of the most important museums of the history of industry and engineering in the world. The Henry Ford Museum of American Innovation[2] currently houses one of the most complete collections of European steam engines. In addition, around 1920 Ford conceived the plan to acquire Edison's Menlo Park Laboratory and transfer it to his museum - but it was so dilapidated at the time that it had to be largely reconstructed.

This is an example of the ambiguous attitude many have towards history. After all, how many workers and executives endearingly collect the souvenirs of their company or industry but claim - following Ford's lead - that only the future counts?

[2] https://www.thehenryford.org/visit/henry-ford-museum/ - the collection is now available for digital consultation online

Does it make sense to study the old crafts, trades and techniques?

Not when we do so out of nostalgia for the good old days that never existed, or from a false romanticism for the things we lost somewhere along the way.

It is because we want to understand the path of history that leads us to today, and how the fate of our ancestors and of us is determined by the course of that path.

History never repeats itself - but in similar situations, people will react in a similar way: when energy is in short supply, when competition from elsewhere or from new techniques and products threatens them.

During the early years of industrial archaeology, there was a debate between the proponents who 'liked the beauty' of the industrial past, the aesthetics of poverty and job insecurity, and those who wanted to clarify the abuses on the basis of the material remains. The difference between the poor 'beluiken' (cul-de-sacs) in Ghent and the working-class neighbourhoods of Le Grand Hornu and Bois-du-Luc...

"We must know the past to understand the present and decide about the future"

The past can be a source of ideas and inspiration for today and for tomorrow.

When I attended a congress on industrial heritage in Lyon at the beginning of my career, sometime in the late 1970s, using eloquent examples one of the directors of the French patent office made a plea for the study of old crafts, the industrial and technical past – explaining that that is where one can find inspiration for solutions that society demands. Many things had been invented in the past but not applied - because they were not technically feasible, because there was no social need for them at the time, or because their realisation would be too expensive. The idea of computer was formulated by Charles Babbage (1791 - 1871) at the beginning of the 19de century. Konstantin Tsiolkowsky (1847-1935) described the possibilities of a jet engine rocket and space travel in a vacuum a century and a half ago. Leonardo da Vinci (1452-1519) drew a parachute, but who needed one at the time?

B. The origins of industrial archaeology

The Golden Sixties

After World War II came an era of reconstruction and restructuring of industry and society, an era of renewal that would culminate in the Brussels World Exhibition Expo'58. The first steps of European unification, the 'European Communities' with Euratom and the European Coal and Steel Community (ECSC) were at the root of the clean-up and downsizing of the industries on which the Industrial Revolution was built. New materials, new techniques, 'the atom' and the conquest of space would shape the future. The Golden Sixties became the era of 'The Waste Makers', as Vance Packard wrote early in that decade.[3]

What was 'old' had to be discarded and replaced by 'new'.

But in several places in Europe, not least in heritage-loving Britain, voices rose against the wholesale demolition of that 'past'. *It's our history and heritage. We have to save it.*

Usually, the origins of industrial archaeology are situated in those years in Britain. Although the discipline first became 'popular' there, thanks to BBC broadcasts and the use by tourist services (such as the BTA, the British Tourist Authority), there was also an early impetus in other countries.

We found the earliest mention of the term as early as 1896 in Portugal[4] : talking about mills, Sousa Viterbo writes 'there is an archaeology of art, why not an archaeology of industry'

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[3] Vance PACKARD: ***The Waste Makers*** (New York, David Mckay Company/ London, Longmans, 1960, 306 pp)

[4] In an article ***Archeologia industrial portuguesa : os moinhos*** (Lisboa : Imprensa Nacional, 14 p., reprint from Archeologo Português, II, 8-9, Aug-Sep. 1896) by the poet, archaeologist, historian and journalist Sousa VITERBO ***E*** *com profunda saudade que vejo desapparecer pouco a pouco os vestígios da nossa antiga actividade, da nossa industria caseira. A machina vae triturando tudo no seu movimento vertiginoso, sem que mão piedosa se lembre de apanhar esses restos, humildes mas gloriosos, depositando-os depois em sitio, onde possam ser cuidadosamente estu dados e onde a curiosidade lhes preste o merecido culto. Existe a archeologia da arte, porque não ha de existir a archeologia da industria?* (It is with deep nostalgia that I see the disappearance, little by little, of the remnants of our past activity, of our own industry. The machine crushes everything in its dizzying motion, without any pious hand thinking of picking up these humble but glorious relics and then depositing them in a place where they can be carefully studied and where curiosity will give them the honour they deserve. There is the archaeology of art, why shouldn't there be an archaeology of industry?). In his further description, however, he limits himself to purely industrial-technological phenomena.

Early interest in industrial heritage also emerged in the GDPR[5] and other countries. In Belgium the term 'archéologie industrielle' appeared as early as 1950 in a publication by René Evrard.[6]

Nevertheless, one can still read everywhere today that the term was invented in the early 1950s by Donald Dudley, then director of the extra mural department at the University of Birmingham. However, he did no more than bring the term into conversation and did not dedicate a publication to it.[7] The term was first published in 1955 in an article by Michael Rix in the journal 'The Amateur Historian'.[8] However, he forgot to clearly define the term and provided only a few implied references to what he understood it to be, the remnants of Britain as the 'cradle of the industrial revolution'.

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5 Cf Eberhard WÄCHTLER: ***Karl Marx, zwei deutsche Staaten und die Industriearchäologie. Gedanken zum Beitrag der DDR zur Formierung und Institutionalisierung der Industriearchäologie 1973 bis 1990***, in *COMPARATIV*, Heft 5-6 (1996), S. 225-232. But interest in 'technical Denkmale' was much older in Germany. During the Weimar Republic, the Free State of Saxony's so-called Heimatschutzgesetz of 13 January 1934 recognised technical heritage as cultural heritage. After the war, the GDR implemented up efforts to preserve technical heritage. In 1952, the Institut für Denkmalpflege in Dresden organised the first exhibition in Germany on the issue of industrial archaeology. In the following years happened, among other things, research at the Bergakademie Freiberg, the Hochschule für Architektur und Bauwesen in Weimar, the Technische Universität and the Hochschule für Verkehrswesen in Dresden. In addition, there were initiatives by the Kulturbund and the Ministry for Industry.

6 René ÉVRARD: ***Le fourneau Saint - Michel . Une belle découverte d'archéologie industrielle*** , in Les Vennes , t . 14 , 10, October 1950, pp. 4-6. In that article, he advocated the preservation of this site near Saint-Hubert. It is now a provincial domain with the Musée du Fer, dedicated to the pre-industrial iron industry around the blast furnace built at the end of the 18th century by the abbot of Saint-Hubert.

7 Kenneth HUDSON: ***Industrial Archaeology. An Introduction*** (London, John Baker Publishers, 1963; reissue London, Methuen, 1965

8 Michael RIX: ***Industrial Archaeology***, in *The Amateur Historian*, vol. 2, 8, Oct-Nov 1955, pp. 225-229: *"Great Britain as the birthplace of the Industrial Revolution is full of monuments left by this remarkable series of events. Any other country would have set up machinery for the scheduling and p of these memorials that symbolise the movement which is changing the face of the globe, but we are so oblivious of our national heritage that apart from a few museum pieces the majority of these landmarks are neglected or unwittingly destroyed."* However, in his article he does give examples, mainly referring to the First Industrial Revolution, but no description or definition of what he considers 'industrial archaeology'.

C. What is industrial archaeology? What is industrial heritage?

Early British authors (of course) looked mainly at the technical developments of the Industrial Revolution in the UK, at the first mills and realisations in transport and civil engineering.

Later, the temporal and geographical window widened and interest fanned out to other countries, where social historians, art historians, engineers and others became interested. For several authors, especially those who came from the business world, a hint of nostalgia was undeniable. Despite all the excesses of early capitalism, they thought it was a 'beautiful' time - a discussion we also had to have and had in the early years in Flanders, sometimes at the cutting edge.

It was the '1968' generation that in Flanders would get things going locally

A first international congress took place in Ironbridge in 1973.[9] Most participants were from Britain, in addition to the USA, Ireland, Canada, Sweden, West and East Germany. There was also one representative from the Open Air Museum in Arnhem, none from Belgium.

In other countries, people started from perspectives other than Anglo-Saxon ones. In 1975 during SICCIM, the 'Second International Conference on the Conservation of Industrial Monuments'[10] at the Bergbau Museum in Bochum, a Babylonian confusion of tongues arose. Did the flint mines of Spiennes also belong to the subject of industrial archaeology. Terms such as 'Geschichte der Proletariatskultur', 'History of material culture' and 'industrielle Volkskunde', the approach of the industrial open-air museums in Sweden, history of technology and social history, etc... mixed up.

What is the value of a science or an approach if there is no uniformity about the subject? This would be resolved in 1978 at the Third Internation-

9 ***First International Congress on the Conservation of Industrial Monuments. Ironbridge 29 May - 5 June 1973.*** Transactions (Ironbridge, Ironbridge Gorge Museum Trust, 1975, 203 pp)

10 The proceedings appeared as Werner KROKER (ed.): ***SICCIM - II International Congress on the Conservation of Industrial Monuments Verhandlungen / Transactions. 3. - 9. 1975***. (Bochum, Deutsches Bergbau-Museum Bochum, 1978, 451 pp)

al Congress in Sweden, TICCIM[11], during the establishment of TICCIH[12], The International Committee for the Conservation of the Industrial Heritage, and the adoption of the TICCIH preamble

> *The study of the Industrial Heritage is concerned with an epoch in man's evolution characterised by industrialisation.*
>
> *Industrialisation implies the onset of a fundamental change in the structure of an economy and a fundamental redeployment away from agriculture, with emphasis on industrial and mechanical innovation advances in the techniques of production; and the mechanization of processes in a single industry leading to 'mass production' - all on the basis of large plants driven by other than human power.*
>
> *The study of Industrial Heritage should be concerned with the society as well as the physical evidence of industrialisation, taking into account men and women, past and present.*
>
> *In view of the multiplicity of industrial phenomena throughout the world, the Industrial Heritage should further be taken to mean:*
>
> 1. *all immovable goods (landscapes, sites and buildings), and movable goods (plant, equipment, and other fixtures and fittings), which provide evidence of the industrial activities of economically advanced or developing societies, including sources of energy and raw materials, working places, housing, transport facilities, and relating machinery;*
> 2. *all written, graphic, and other documents and records of industrial activities; and of industrial sites, structures, and equipment, including documents as refer to the commissioning and construction; together with such technical, legal, administrative, and other text as deal with the industrial heritage in general;*
> 3. *industrial products, to the extent that they are essential to the understanding of such activities.*

[11] Proceedings published as Marie NISSER: ***The Industrial Heritage. The Third International Conference on the Conservation of Industrial Monuments, Sweden 30 May - 5 June 1978. Transactions*** (Stockholm, Nordiska Museet, 1981, 3 volumes).

[12] https://ticcih.org/

All of which should be listed, studied, conserved, and interpreted for purposes of adequate documentation; and of education, culture, and enjoympent, through selective, planned action along thematic lines."

Although other charters and texts came on the market afterwards, this preamble would be decisive.

Industrial archaeology thus became the science of the industrial heritage, the material culture of the industrial epoch - which, for people who who enjoy philosophising, still provided the opportunity afterwards to argue about when the industrial period begins, and whether and when it ended? Does the era of AI ("alternative intelligence", sic) still belong to the industrial period, at a time when the service sector has overtaken the manufacturing sector.

D. Origins of industrial archaeology in Flanders

The term 'industrial archaeology' was coined by the late Prof Jan Dhondt in 1970-71 at Ghent State University in his Encyclopaedia Newest Times course. He argued that material remains could also be a source for the study of more recent history. His seminar, the 'fifth floor' in the Blandijnberg university building, had a rather 'left-wing' image at the time. Dialectical materialism was not unknown there, the material infrastructure as determining and explaining the spiritual suprastructure. How place and ways of working and living determined culture and thought.

Jan Dhondt invited several guest speakers, including Georges van den Abeelen, general adviser at the then Federation of Belgian Industry,[13] and the well-known British author Kenneth Hudson.[14]

On 8 December 1971, on the initiative and under the chairmanship of Jan Dhondt, the Working Group on Industrial Archaeology of the State University of Ghent (Werkgroep Industriële Archeologie Rijksuniversiteit Gent, WIARUG) was founded, the first organisation for industrial archaeology in Belgium. It included staff members of the Seminary of Contemporary

[13] Author of, among others, ***The Industrial Archaeology*** (Brussels, publication of the Federation of Belgian Industry, 1972, 31 pp)

[14] Kenneth HUDSON: ***Industrial archaeology. An introduction*** (London, John Baker,1963, 179 pp)

History, some students, but also interested parties from other faculties and even from outside the university.

The death of Jan Dhondt (Beirut, 20 August 1972) threatened to bring the initiative to a standstill. The student association ‘Vlaamse Geschiedkundige Kring' relaunched the initiative with an evening workshop and debate on 29 January 1973.

In 1970, the already existing separate departments of the Royal Commission for Monuments and Sites were converted into separate commissions for the French and Dutch-speaking communities. By Royal Decree of 1 June 1972, the Flemish ‘Rijksdienst voor Monumenten en Landschappen’ (Department for Monuments and Sites) was established.

The key year 1975

On 9 November 1973, the draft Decree for the Protection of Monuments and Sites had been submitted to the Council of the Dutch Cultural Community by the Minister of Dutch Culture and Flemish Affairs, Jos Chabert. It was one of the first legislative initiatives of the new Council of the Dutch Cultural Community, but it was approved only three years later.

Under his successor Minister of Dutch Culture Rika De Backer (1974-1979), protection and conservation if historic buildings was diligently pursued. The European Year of Architectural Heritage was a catalyst in 1975.

The British influence on the Year was unmistakable, including through a broader interpretation of the term 'monument' and also through the tendency to involve ordinary citizens in heritage care. Previously neglected heritage themes now came to the fore, such as military heritage, 'vernacular architecture', industrial and technical heritage. In all Flemish municipalities, citizens were encouraged to set up monument committees, and to identify what they thought were important buildings via record cards to be sent to the historic buildings departme,nt. It became an overwhelm.

In 1975, despite much opposition, Antwerp's central station[15] was legally protected, and, after a hard campaign, a first purely industrial building, also the Stellingwerff-Theunissen distillery in Hasselt.[16] At the time, this

[15] First the building was protected. Only later also the cupola over the tracks and even much later the railway embankment up to about Berchem. https://inventaris.onroerenderfgoed.be/erfgoedobjecten/7051

[16] See http://industrieelerfgoed.be/content/jeneverstokerij-stellingwerff-theunissen-nu-jenevermuseum

was still done by Royal Decree based on the law of 7 August 1931, on the preservation of Monuments and Landscapes.

The first decree

Only the decree of 3 March 1976 (Official Gazette 22 April 1976) on the "protection, preservation, maintenance and restoration of monuments and town and villagescapes located in the Dutch-speaking region" would place the competence with the Flemish Cultural Community.

That decree gave the definition of monument in art. 2 §1: *"an immovable object, work of man or of nature or both together, which is of general interest because of its artistic, scientific, historical, vernacular, industrial-archaeological or other socio-cultural value, including the movable property contained therein, immovable by destination."* The inclusion of the term industrial archaeology was a first in European heritage legislation.

From now on, preserving a monument was also no longer of national interest, but of general interest - a shift in appreciation.

The influence of the Year of Monuments and the 1976 decree shifted the focus for the industrial remains from the scientific aspects to the 'conservation' aspect, 'archaeology' became 'heritage'.

A false start, the CIA in 1974

In May 1973, the University of Mons organised the first national congress dedicated to industrial archaeology in Belgium. That decided to create an inter-university 'Centre for Industrial Archaeology' (*Centrum voor Industriële Archeologie - Centre d'Archéologie Industrielle* - CIA-CAI). It started operations that year or in 1974, from a seat in the Royal Library in Brussels, although the statutes of the non-profit organisation did not appear in the Official Gazette until 13 February 1975. Chairman was Georges van den Abeelen, secretary-treasurers were Prof Marinette Bruwier (Université de Mons) and Prof Els Witte (VUB University Brussels). A first issue of a journal *'Centrum voor Industriële Archeologie. Mededelingen'* appeared in January 1975, in two versions with a French-language version 'Centre d'Archéologie Industrielle. Informations' with different content.[17] A final issue is dated January & April 1976.

[17] See https://industrieelerfgoed.be/Centrum-Industriele-Archeologie-tijdschriften

The Centre for Industrial Archaeology was able to engage two researchers from April 1974 to early 1975, the undersigned part-time for Flanders and François Roelants du Vivier full-time for Wallonia, thanks to funding from two banks, the 'Gemeentekrediet' (Municipal Credit) and the 'Nationale Maatschappij voor Krediet aan de Nijverheid' (National Company for Credit to Industry). Together, in the basement of the Maps and Plans Department of the Royal Library, from a single desk with two chairs, they prepared the first exhibition on industrial archaeology.[18] It was opened by King Baudouin and Queen Fabiola in the then Passage 44, and attracted 82 000 visitors between 29 November 1975 and 4 January 1976. An unprecedented and unexpected success. Visitors received postcards with which to signal industrial heritage, were called to activities,...

But when the responses started pouring in, the CIA was no longer there.

Resources had run out, and attempts to loosen government subsidies for a national organisation were not honoured by both Communities - consequence of the first state reform.

Establishment of VVIA, the Flemish Association for Industrial Archaeology

Meanwhile, due to the dynamics of the new Flemish Department for Monuments and Sites and the existing need to provide a replacement for the CIA, a non-profit trust, the Flemish Association for Industrial Archaeology was founded in 1978 - symbolically on '1 May' - as an independent and non-aligned association.

In the aftermath of the 1975 Year of Monuments, working groups, action groups, associations had also been formed in most municipalities and regions to work for heritage rescue and conservation. Industrial heritage was not missing from the movement. But as for the other heritage sectors, most of these actors have now disappeared.

[18] A catalogue was also published on the occasion of the exhibition, which long served as a kind of manual for practitioners of industrial archaeology: Marinette BRUWIER & Jean-Marie DUVOSQUEL : ***En toen kwam de machine. Ontmoeting met de Industriële Archeologie (And then came the machine. Encounter with Industrial Archaeology)*** (Brussels, Nationale Maatschappij voor Krediet aan de Nijverheid / Gemeentekrediet van België, 1975, 192 pp) - in a French-language version ***Le regne de la machine. Rencontre avec l'Archéologie Industrielle***

Regions / Communities

As far as Flanders is concerned, the powers were entrusted to a single Flemish government, with powers being divided. Immovable heritage (Regional matter) is at present handled by the Agentschap Onroerend Erfgoed (Agency for Immovable Heritage).[19] Movable and intangible heritage (Community competence) falls under a different minister and is handled by the Department of Culture, Youth and Media, which, however, has outsourced many tasks to the non-profit Government NGO 'FARO', Flemish support centre for cultural heritage.[20]

The separate powers between Region and Community and associated services pose a problem of coordination for industrial heritage, a theme which must be viewed holistically. As long as a steam boiler is bricked into a building, it is a competence of Immovable Heritage, being immovable by destination. Once removed from the building it is movable and a competence of the Flemish Community. Intangible heritage, the preservation of old techniques, is also a competence of the Flemish Community.

This dichotomy within the heritage sector makes Flanders unique in Europe. We are the only region to have a separate Heritage Day for movable and intangible heritage in spring, and a 'Monuments Day' in September. The latter is organised within the framework of the 'European Heritage Days',[21] which indiscriminately highlights all forms of heritage.

Citizens sometimes question whether a monument is not 'heritage'

19 https://www.onroerenderfgoed.be/
20 https://faro.be/ This is what is called in Britain a 'GONGO', a Goverment Organised Non Governmental Organisation
21 https://www.europeanheritagedays.com/

E. Dealing with heritage

What is the situation for the industrial heritage in Flanders?

1. Research

Lack of research

In her opening speech at the 5de (and last) National Congress of Industrial Archaeology dedicated to the textile industry, organised in Ghent in 1977, Rika de Backer-Van Ocken, then Minister of Dutch Culture and Flemish Affairs, lamented that historians limited themselves mainly to archive research and had not got around to a systematic scientific investigation of the material remains. Has that changed since then? I have the impression it doesn't. Research into the industrial past is still mainly done on paper.

A historian is expert in his discipline and source research. For study of material remains, he should be assisted by other experts, each from their expertise. The input of and collaboration between technicians, engineers, (art) historians, architects, is hugely important and can yield different views than when heritage and issues are only viewed from one angle.

The importance of fieldwork

One doesn't practise industrial archaeology from behind a cosy desk. For that, you have to go to the very places where the heritage is located, the places where the problem arises.

When, in my neophyte days in London, I visited an architectural firm dedicated to restoration and rehabilitation of industrial buildings. I could notice that they were loading their drawing tables, measuring equipment, chalk paper (it was still the pre-computer era) into a caravan. Why? "Because we want to work on site, experience what the building has to offer, during the day, at night, in sunshine and rain."

What prevents us from combining documentary research and fieldwork?

In 1840, or just before, a blast furnace was established in Leefdaal, halfway between Brussels and Leuven, by Jules Meunier from that municipality and F. Lemaire from Lille (France), attracted by the ferruginous

limonite found nearby. Engineer-director of the company was A. Guilbert who had come over from Wallonia along with a number of workmen. It was essentially still a charcoal furnace, which would also have worked on coke. The project was abandoned in 1848, and the complex was sold in 1851. Based on the land register and other sources, the site can be located fairly precisely. What stops us from going there with some archaeologists and investigating what traces can still be found? Can slag still be found, and can its composition provide information about the ores and fuels used?

Similarly, we can locate numerous vanished water mills and other sites. Wouldn't it be interesting to have a team of historians tease out the history and all the details, while an independent team of archaeologists does the same based on the remaining material traces - to compare the results afterwards?

Inventory

We need to have a picture and an overview of what remains today.

The inventory of architectural heritage in Flanders was a project started by the central Belgian government since 1965-1966, later carried out by the Flemish government. The first inventory was done for the district of Leuven and was published in 1971 in the first volume of the series ‘Bouwen door de Eeuwen Heen’ (‘Building through the centuries’). In principle, this publication contained only 'monuments' dating from before the beginning of the 19th century. In 1975, volume 2n appeared: Flemish Brabant, Halle-Vilvoorde, which - new for the time - also included more recent and industrial sites.

The data from this publication series and later additions form the basis of the inventory that can now also be found on the internet,[22] but it is clear that - especially for industrial heritage - there are numerous gaps.

The 'old' inventory is essentially a façade inventory (what do you see from the street) and little research could be done in libraries and archives. As a result, much industrial heritage, especially that of SMEs(Small or medium-sized businesses), went (and still goes) unnoticed. It is not immediately visible from the street. It is behind a 'neutral' facade, with no art historical

[22] https://www.statistiekvlaanderen.be/nl/beschermd-patrimonium
https://inventaris.onroerenderfgoed.be/

or artistic features. It is hidden in an inner block, accessible through a gate. Only in exceptional cases the internal structure of these buildings, the remaining contents and machinery have been investigated,

Entering and photographing on private property is even more restricted today than it was then, by GDPR and privacy laws. What is behind walls and inside blocks thus escapes, both from the architectural heritage inventory and possible protection, but also from the possibility of scientific research and knowledge gathering.

Calling on volunteers and local people, who know their neighbourhood, to supplement inventories is common in most other countries. The inventory of British industrial heritage started in the early 1970s with the record cards that were mass-distributed through the CBA Council of British Archaeology and collected and filed in a room at Bath University by one staff member, Keith Falkoner. In 1975, on the occasion of the European Year of the Architectural Heritage, record cards were also distributed in Flanders through the Secretariat of the Year - collected by coordinator Daniel Ostyn and his secretary Josepha. They could be put to useful use by the inventory teams at the time.

Looking and seeing

But, more importantly, we need researchers, surveyors, architects, citizens,... ***learn to look***. Too many details that tell a story in buildings, along streets one doesn't even notice. Their traces risk to be lost for ever.

Many (art) historians involved in these first inventories had little or no affection or knowledge of the subject and its details, and I must admit myself that much escaped my attention and that I had to learn a lot at the time...

The Catalan Museu Nacional de la Ciència i de la Tècnica (which is more than just a 'museum' and also gets involved in preserving and interpreting immovable heritage) has launched an exciting campaign in this regard, to get citizens to discover and record things and details. Through 'Museu al Carrer'[23] (the museum in the street), citizens are encouraged to photograph details that testify to the industrial past and submit those photos. They are collected on a website and a major exhibition on the material will be prepared.

[23] https://museualcarrer.cat/

Registering what is lost

An archaeologist knows that much will be 'lost' as a result of his/her intervention and he/she will therefore rigorously record and document all his/her actions. When adapting, repurposing and demolishing industrial buildings, this seems to be the least of their concerns.

2. Preserve, protect

The historian does not destroy his sources. The material remains of the industrial era can be an important source not only for industrial and technical history, but also for social and societal situations and developments - provided we 'read' and 'interpret' them, even the details.

We collect too many rare butterflies

Both at home and abroad, most attention still goes to the big, the impressive, and 'aesthetic' buildings while ignoring modest buildings and the heritage of SMEs.

The impressive structures, the shaft towers of mines, the blast furnaces, the big textile mills sometimes remind one of the windmills that Don Quixote could see from a great distance.

The often inconspicuous workshops of small businesses are passed by. But in some years they represented almost three quarters of GDP. They certainly do not represent the same percentage of protected, inventoried or documented heritage. Collecting the archives of dozens of small companies is much more difficult than bringing in an archive of a large company 'en vrac'.

Besides the commercial buildings and infrastructure, there are also the houses and homes, representing the industrial environment. It is about - as the UK Civic Trust once put it - 'caring for places where people live and work'.

2.1. Protection as a monument

Clearly, not all remaining breweries or industrial properties in Flanders can or should be protected. It leaves a whole range of them 'unprotected' and dependent on the interest or options of the owner or rights holders. In a community where citizens are proud of their heritage and consider it important, such would not be a problem, but in Flanders it is rather the opposite. In a densely built-up region, where owners and property developers want to generate profits, a lot of heritage ‘stands in the way’.

Protection is also highly dependent on the philosophy of the minister and the demand or pressure from the citizen movement.

According to the latest figures from statistics Flanders,[24] the Flemish Region had 11,402 protected monuments by the end of 2023.

After the European Year of Architectural Heritage (1975), the number of protections increased, with highs in 1981 (626 protections), 2002 (662), 2003 (657) and 2004 (723). Those figures make heritage conservationists homesick, because in recent years the number of annual protections has been systematically declining: 2018 saw 99, 2019 70 and 2020 just 20. Seven were signed in 2022, only six final protection decisions were made in 2023. This flirts with the deep record of 1989, when 10 monuments were pardoned by minister Waltniel.

What is striking here is that industrial heritage is still not given a prominent place, despite its socio-economic importance in recent history.

According to a recent (2021) research report,[25] 2130 religion-related sites are now protected in Flanders, of which 1185 are churches and chapels.

In contrast, there are only 180 industrial buildings or production sites, and the number in the industrial heritage sector is mainly boosted by mills (345 sites), transport infrastructure (255 sites). There are also 50 utilities protected.

[24] https://www.statistiekvlaanderen.be/nl/beschermd-patrimonium

[25] *Protected architectural heritage in Flanders. The delineation of thematic research packages (2021)* https://www.academia.edu/60280197/Beschermd_bouwkundig_erfgoed_in_Vlaanderen_De_afbakening_van_thematische_onderzoekspakketten.

Protection of industrial heritage only took off after 1975 - although a large number of windmills were already protected before then. As far as it concerns the industrial heritage we read in the report, on p. 41:

"*However great the growth in the 1990s, the more remarkable was the decline after 2005. With a total of around 90 protected heritage items from 2006 to 2019 - only 5% of the total number of protected heritage items in this period - industrial heritage was clearly no longer top-of-mind. This is also evident from the observation that there was not a single thematic research package dedicated to this topic, not even in one province.*" The 1990s was the period of the ministry of Johan Sauwens, who was strongly committed to a protection policy and, among other things, ensured the protection of Limburg's mine buildings.

The low number of protected industrial buildings contrasts with the number in Catalonia, which has a roughly similar population. The first industrial building in Catalonia was protected in 1975, the textile mill Fàbrica Casaramona at the foot of Montjuïc. In 1975, the first industrial building was also protected in Flanders, the distillery Stellingwerf-Theunissen in Hasselt. So the start was similar, the finish line was not. Although there are different levels of protection in Spain and Catalonia, from national (béns culturals d'interès nacional, BCIN, designated by the Spanish government) to Catalan (béns culturals d'interès local, BCIL, designated by the Catalan government), Catalonia now has 2,571 protected industrial premises, according to the list of the Generalitat's Culture Department. In addition, municipalities can also create their own protection lists. In 2006, Barcelona's Poblenou district alone had 114 industrial properties included on the municipal list.[26] The repurposing movement for these, by the way, is remarkable.

We mention here in passing that Spain has 'Plan Nacional de Patrimonio Industrial' (National Plan for Industrial Heritage),[27] in addition to similar

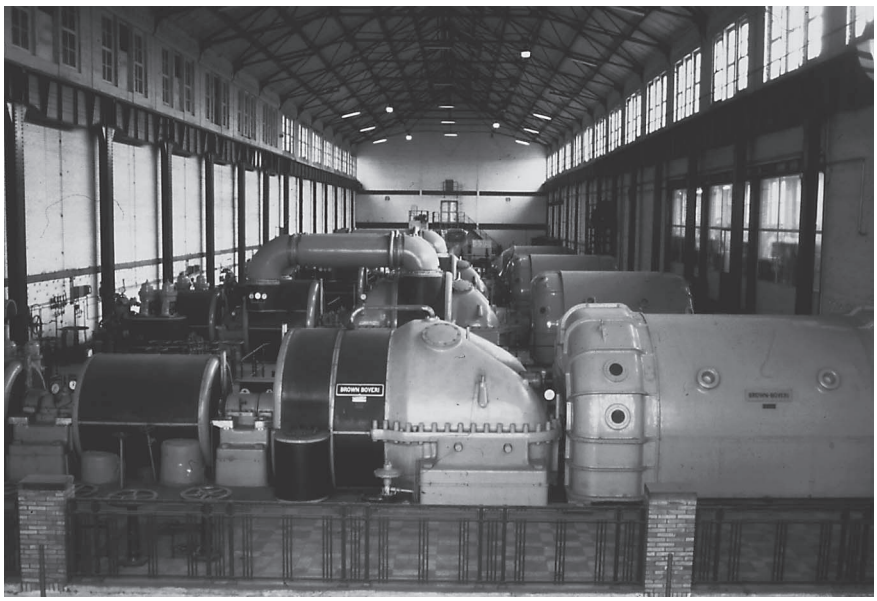
[26] For the situation of industrial heritage in Catalonia see : http://www.patrimoniindustrial.cat/ and through the Catalan architectural heritage inventory https://invarquit.cultura.gencat.cat/simple-search

[27] In Spain, for the different types of heritage, national cultural heritage plans were drawn up by the central government. These are heritage management tools shared between the different administrations, with the participation of other public or private entities. The national plans provide an informative basis for decision-making, establish a shared methodology for action and set priorities according to heritage needs, with the ultimate goal of protecting and preserving cultural assets. https://www.cultura.gob.es/planes-nacionales/planes-nacionales/patrimonio-industrial.html

planning for other heritage themes - although not all autonomous regions follow that planning. Catalonia has a strong cultural policy of its own[28] and its own policy plan for immovable heritage, the *'Pla per a la conservació, la protecció i la difusió del patrimoni cultural immoble de Catalunya'*

However, protection as a monument does not guarantee preservation.

CASE : the Langerbrugge power plant



Energeia 1986 Langerbrugge (photo A.Linters)

In the early 1980s, the then electricity company EBES decided to preserve and exhibit its heritage. The site chosen was the Langerbrugge power plant, designed by architect Eugène Dhuicque. The 'Energeia' museum on the history of energy was officially opened on 14 March 1986. The on-site installations, including the Brown-Boveri steam turbines, were supplemented by objects and equipment from other power plants (Sas Slijkens, Schelle) and other companies. One of the attractions became the tandem-compound steam engine with flywheel alternator (1922, Van den Kerchove) transferred

[28] https://cultura.gencat.cat/ca/departament/plans-i-programes/

from the Haacht brewery in 1985.[29] Archives and documentation also found a place there

It became a popular heritage site where several study days and conferences on industrial archaeology were held. ‘Energeia’ received a 'special mention' in the 1986 Henry Ford European Conservation Awards.

It was running smoothly until the end of the last century, but it hit a snag after EBES, Intercom and Unerg merged to form Electrabel, and when that group came under the wings of France's Suez (1998-2005). When ominous reports surfaced about the endangered future of the Langerbrugge and Zwevegem[30] power plants, the Historic Buildings Agency decided to initiate a protection procedure for both plants. On 19 November 1999, the Langerbrugge power station was legally scheduled as a monument. In reaction to the protection Electrabel early 2000 closed the Museum Energeia - and went to the Council of State to claim the annulment of the protection. A first procedure was rejected by the Council of State in early 2001, but Electrabel started a new one. On 3 December 2009, the protection was annulled.[31]

Subsequently, a new protection procedure was initiated that took into account the comments made during the procedure before the Council of State, leading to a final protection on 23 August 2013.[32]

In 2010, the site was sold to a property developer, who started demolishing the plant in 2012. Copper thieves had extensive opportunity to make their move. Measuring equipment and control boards were stolen and just about all museum objects and the remaining documents of the former archive were destroyed.

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29 See Guy DEBLEECKERE (ed.), ***Energeis. Museum of Industrial Heritage of Ebes. List of exhibited machines, appliances and documents*** (Z.p., Environmental Management Service of EBES s.a., September 1986)

30 The Zwevegem power station was also given heritage status by Intercom, as a counterpart to what had happened in Langerbrugge. It was legally protected as a monument on 10 June 1999, after which it was bought by the municipality of Zwevegem, which is now redeveloping it as 'Trasfo' together with the Leiedal inter-communal association.

31 http://www.raadvst-consetat.be/Arresten/198000/400/198442.pdf

32 https://besluiten.onroerenderfgoed.be/besluiten/5209/bestanden/13838

Clearly, the historical value was not a priority at all for the new owner, Langerbrugge Projects.[33]

Meanwhile, repeated attempts were made to draw attention to the importance of the power plant. In 2021, there was 'Konnektor', an art project in the shadow of the old power plant - which, however, was not allowed to take place on the plant's site. In November that year, Minister Diependaele announced that he was allocating 100,000 euros for conservation and research into repurposing possibilities.

In April 2023 the chairman of the christen-democrats group, Stijn De Roo, asked some pressing questions in the Ghent city council. From the answer, we learn that a study 'Placemaking Power Plant' was carried out to look for a solution. A supervisory group experienced the study itself as a positive story.

Among other things, the study examined the consequences with regard to nearby Seveso establishments. It showed that cultural scenarios, schools and healthcare facilities are not realistic. Four scenarios emerged, of which two were preferred:

Scenario 1 is a Circular Material / Energy Hub with as possible programme: distribution, processing and recycling of goods, a circular showroom, impact Lab and an educational trail. Scenario 2 is a Port House 2.0 with possible programme: offices, thematic labs, meeting rooms/aula, expo hall, library, catering and sports facilities

Working groups would be formed and a project coordinator appointed, but there is still a wait for that. It is ultimately the owner MG Real Estate, who will appoint this project coordinator and then install the working groups.

In early 2023, the city of Ghent was counting on a quick relaunch, but the timing was still unclear. Since then, the initiative is up to the developer.[34]

33 https://www.mgrealestate.eu/nl/projecten/mg-power

34 https://www.stijnderoo.be/herbestemming_elektriciteitscentrale_langerbrugge_twee_scenario_s_op_tafel

2.2. Conservation and repurposing

Despite the large number of vacant and easily re-usable industrial buildings, (too) little policy attention is paid to this in Flanders, unlike - again - religious heritage.

We read in the aforementioned 2021 research report (on p. 47) : *The reallocation of churches has been at the centre of public debate for a decade. The issue is a priority in the Real Estate Heritage and Domestic Administration Policy Paper. The drafting of church policy plans also places the issue high on the agenda."*

In preservation and repurposing, the relative cost for industrial buildings turns out to be cheap per sq m, but the total cost is high due to large areas to deal with. This often makes public authorities and private investors prefer to hold off.

Last but not least, the general contamination of old industrial sites plays a part.

CASE : Ostend creosote yard :

The creosote yard was one of the oldest and best-preserved testimonies of industrial port activities in Ostend. The yard was established around 1900 to impregnate with creosote oil telephone poles, sleepers for tram and rail lines, poles for hops farming and meadow fences. Operation of the yard was entrusted to private companies via tender. However, due to falling demand, operations steadily declined and fell silent in 1984.

The site was legally protected in 1995. The building was subsequently opened repeatedly for groups and during The European Heritage Days.

In 2010, OVAM, the Public Waste Agency of Flanders identified severe contamination of the soil with mineral oil, benzene, naphthalene and phenols to great depth (> 7m), as well as severe contamination of the groundwater. The materials of the buildings themselves were permeated with the toxic derivatives of the creosote oil. In the interior of the building the standards for permissible concentrations of evaporating creosote products were exceeded, creating a human risk (both mutagenic and carcinogenic).

OVAM concluded that there were no techniques to deal with this pollution while preserving the building. There were intense consultations to find a solution, but OVAM demanded demolition and remediation. After much tugging and pushing, in 2013 the Royal Commission on Monuments and Sites gave permission for the installations to be dismantled and then rebuilt on the site in a reconstituted heritage centre. The installations are still 'in storage' today, some of them even out in the open in all weathers.

Creosote yard Ostend (photo A.Linters)

2.3. Protections can also be 'lifted'.

According to the Decree on Immovable Heritage, Article 6.2.1, the Flemish Government may modify or cancel a protection in whole or in part when:

1. the heritage values of the protected property have been irreparably damaged or lost;
2. a relocation of the protected property is necessary for the preservation of its heritage values or is required because of the public interest;
3. the whole or partial amendment or abolition is required for reasons of public interest;

Whereas previously this possibility was only exceptionally used, it is now tendency. Since the beginning of 2020, 219 proposals to remove the protection of a monument were initiated in Flanders, because of its dilapidated state, because of renovations, or because of 'general public interest'.

As for industrial heritage, we refer to the Hensen tower crane in Temse and the wooden canal boat the Céphée in Antwerp. However, both procedures were withdrawn after massive protests. The same happened for the old chimney of the Ramskapelle brickworks, which served as a lookout post for Allied armies in World War I - which also had protests pouring in from abroad.

The removal of protection for several windmills came because of their dilapidated condition. It should be mentioned that the Flemish heritage decree imposes an active conservation principle. It states that an owner must carry out timely works for the preservation, security, management, repair and maintenance of protected property. In the case of the dilapidated mills, it was clear that there was no or insufficient monitoring of the condition from the point of view of monument conservation, and that over decades no action was taken against neglect, or was taken too late. The removal of a protection therefore represents a nice gift to the unwilling owner.

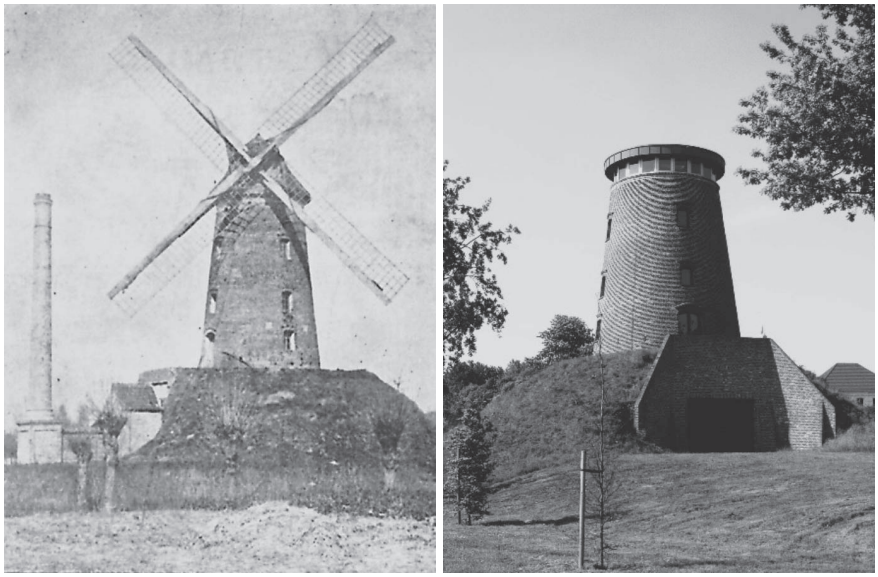
CASE : the Doornzele windmill in Evergem

At the time of its protection, on 30 April 1945 by Regent's decree, the Doornzele mill was still windmilling. Due to a storm in February 1948, the sails and axle head broke. In 1957, the mill hull was stripped of its mill cap without permission. Only the brick mill hull and the mill bell, which contained a mechanical grinding mill until 1970, were preserved.

In 1995, the body of the mill was purchased by the municipality of Evergem. Because the municipality had three windmills at its disposal (two of which were grinding capable), and a grinding capable outdoor horse mill, it was opted - with the consent of the Department of Monuments and Sites - for a non-wind milling restoration of the Doornzele mill. During the subsidised repurposing in 2000-2002, the mill was converted into an observation tower and a multi-purpose place. A cafeteria, kitchen and sanitary facilities were installed

in the mill basement, and exhibition and meeting rooms on the upper floors. In addition, the body was finished with a flat roof with belvedere and a new external staircase was provided. Only the original layout of the mill with a passageway in the beltway and four levels in the hull was retained. The result of these "quite unique restoration and reuse options for Flemish mill heritage", which were carried out with the approval of the Flemish Region, turned out to be a hard restoration in which very many heritage elements and characteristics were irreparably lost.

From the thematic-typological re-evaluation of windmill heritage in Flanders (2020-2021), a lifting of protection as a monument was proposed.[35] The protection was lifted on 18 November 2022.



Doornzele Mill: photo before 1948 and present photo(Wikimedia commons: Limo Wreck mai 2008)

[35] https://inventaris.onroerenderfgoed.be/erfgoedobjecten/33783 and Agency Real Estate Heritage : *Dissolution file: Doornzelemolen, Evergem, Doornzele, Dries without number - monument. Content Dossier. File number: 4.001/44019/102.1* (28/03/2022) https://openbareonderzoeken.onroerenderfgoed.be/openbareonderzoeken/340/bijlagen/1400

2.4. The listing of architectural heritage

For immovable heritage, in addition to legal protection as a monument, there is also the weak 'Established Inventory of Immovable Heritage'.

This Flemish inventory of architectural heritage contains 75,000 buildings and structures. The list is revised every few years, recently for the provinces of Limburg and Antwerp in 2018 and 2019, in 2021 for Flemish Brabant, and in 2023 and 2024 for East Flanders and West Flanders.

The old list for West-Flanders included 28,073 architectural objects. 2,855 objects have been removed because they did no longer have heritage value, due to demolition or conversion or because there were administrative errors. 25,218 properties and structures are included in the new list.

On 26 April 2024 the ministerial decree establishing the inventory of architectural heritage in the province of West Flanders was signed, the legal effects of taking effect from 14 May 2024.

Recently, planning permission for the listed buildings was decentralised to the municipalities. They do have to justify their decision, but experience shows that this is often just a formality (unless there are protests from citizens or associations) and that many decisions are made unencumbered by knowledge.

2.5. Lost through unfamiliarity

Not every civil servant can know everything, we have to agree. But the knowledge of the specificities, importance and values of the diverse types of industrial heritage seems sadly lacking.

CASE: The "Scheepsdale" Bridge in Bruges

Engineer Arthur Vierendeel (1852-1940) gave metal construction completely new principles at the end of the last century by designing metal truss lacking diagonal members. His calculation model was revolutionary and engineer Vierendeel won praise from all over the

Scheepsdale bridge before demolition (photo A.Linters)

world. In fact, he was the greatest innovator of metal construction after Eiffel - unfortunately, we are too little aware of this.

The Scheepsdale Bridge in Bruges was the oldest Vierendeel bridge still in existence in our country, supposedly the oldest in the world, and the only Vierendeel swing bridge known. It was still riveted, while most other recently were welded.

The Scheepsdale Bridge replaced a destroyed bridge after the First World War. Plans were drawn up on 26 June 1926 and approved by Arthur Vierendeel on 1 March 1928. However, the bridge would not be built until 1932-1933 by the Brugeoise metal works.

In 2007, the Flemish Master Architect launched an open call for the construction of a new bridge stating only that the existing bridge was "very outdated", completely ignoring its historical value. Even at the departments of spatial planning, heritage conservation, the city of Bruges,... supposedly nobody was aware of the unique value of this bridge - and consequently a demolition permit without condi-

tions was granted. Yet the city and various departments had already been alerted to the importance of the bridge by local groups in 2006 and 2007 - without getting a hearing.

The bridge was demolished in 2009, despite massive protests from home and abroad. A central piece of the bridge (about 9 tonnes) was saved by local activists and Flemish Association for Industrial Archaeology and is available to whoever wants to turn it into a monument in honour of Vierendeel - but so far there appears to be no interest...

CASE : "Petroleum Zuid" in Antwerp

At the beginning of the 20th century, Petroleum Zuid (Petroleum South) was Europe's most important petroleum port and, as a result, Antwerp emerged as the centre of petroleum interests.

By Royal Decree of 28 June 1900, 54 hectares of polder land in Hoboken were expropriated for the construction of new petroleum facilities - because it had been decided that storing large quantities of that flammable commodity in the old harbour near the city centre was too dangerous. A rough layout plan was drawn up and construction work began in early 1902. The first concessions were granted, and from 1903 new installations were commissioned. The pioneer in this was the American Petroleum Company (APC). On 26 August 1904, a major fire broke out in the new petroleum port. APC's tanks were destroyed, but the stack and workhouses, and the concierge escaped.

A quick-scan of the area in early 2001[36] concluded for these buildings *"On the grounds of 'International Oil' there are (...) a series of adjoining industrial halls, at least one of which has a remarkable interior construction (vaulted arch, made of concrete). Due alterations that have been carried out, it could not be ascertained from the outside whether this construction was preserved in adjoining halls (but the suspicion exists). If, as the current state of research seems to indicate, these buildings date from 1906, this would be a rather*

[36] ***Petroleum South. Urgency study, summary report 20/03/2001*** (Wevelgem, Kleio heritage consultants, 2001, 35 p) , see http://vvia.be/sites/pics_AN/2000001/Studie%20BOM.pdf

unique feature. (...) In our opinion, the accompanying service houses (built before 1907) are also eligible for preservation...

Later research revealed that these buildings were even older, predating the 1904 fire.

This study was drawn up at the request of the 'Buurtontwikkelingswerk Antwerpen Zuid' (Neighbourhood Development Antwerp South), and sent to all services involved (urban planning, urban heritage services, aldermen, city and Flemish heritage departments, province, etc.) but had no result or follow-up. As a result, more than a decade was lost in terms of policy on the industrial heritage of Petroleum South.

In the summer of 2010, an application for demolition was posted to the old APC buildings. The Heritage Agency was alerted and quickly listed the buildings.

However, a demolition permit for this site was issued three days before the legal validity of the listing, on 24 November.

After tough negotiations, it was reached that the concrete buildings would be preserved, the others on the site demolished. Meanwhile, a (modest) protection plan was worked out. Of the APC, today only the concrete buildings remain. In addition, at Petroleum South, besides part of the petroleum pipelines, the concrete mooring quay and some storage tanks were also legally protected.

Petroleum Zuid Antwerp (photos A.Ilnters)

3. Preserving the movable heritage

Much has been lost over the years. Interesting installations were scrapped or disappeared across the border - because people here did not realise their importance (or too late). Because resources were lacking. Because there was no space to store them - albeit temporarily.

In a circular letter of the Centre for Industrial Archaeology, dated 15 June 1976, we can read, among other things: *'storage space???? Objects are now appearing on various sides, which can be acquired. The problem is always to find a suitable storage space somewhere, to - temporarily - pile them up. One can think of one fairly large barn, hangar,... per region (e.g. per province)."*

On 28 April 1985, hope arose, when A. Vermeulen, chief of cabinet of Flemish Minister of Culture Karel Poma, announced during his closing lecture of the 5de Flemish-Dutch Meeting on Industrial Archaeology in Oudenaarde: *'Companies or individuals regularly appeal in vain to the 'Administration for Monument and Landscapes', associations and small museums to provide historically valuable machinery with a salvageable home, albeit on a provisional basis.*

Until now, however, there was no such thing as a central collection point for such offers.
The donors were therefore disappointed, the machines reduced to scrap.
I may therefore report good news to You in this context.
Indeed, I have decided to reserve part of Hemiksem Abbey as a collection centre for movable industrial heritage."

The abbey was then still a military site, and next to it were large military hangars. These proved excellent for stacking, loading and unloading industrial heritage. Because they were built over the course of more than a century, they also showed the evolution of building technology up to the Cold War.

However, it was too early a cheer.

After the elections of 13 October 1985, a new Flemish Government was formed, with Patrick Dewael as minister of culture. That government decided to restore Hemiksem Abbey to its former grandeur, and therefore all its ancillary structures were demolished.

3.1. Museums of industry, engineering and science

Museums of science, technology and industry emerged in all countries during the 19th and early 20th centuries. The *Conservatoire National des Arts et Métiers* in Paris in 1794 was an outgrowth of the 'état conservateur' and the educational aims of the French Revolution. The idea came from abbé Henri Grégoire, who was dedicated to protecting the national heritage and spreading culture. In particular, he set out to put the nation on the path to progress, defended the principle of economic sovereignty and proposed the creation of a Conservatoire "for arts and crafts". He wanted to bring together in one place machines, tools, instruments and drawings, with the idea *"de marquer un esprit curieux aussi bien qu'un tableau de maître peut encourager des vocations d'artistes"* [37]

The Science Museum in London was founded in 1857 by Bennet Woodcroft, from the collection of the Royal Society of Arts and the remains

[37] Abbé Henri Grégoire, *Rapport sur l'établissement d'un Conservatoire des Arts et Métiers, Séance du 8 vendémiaire, l'an 3 de la République une et indivisible* (Paris, Imprimerie nationale, vendémiaire an iii)

of the Great Exhibition (1851) as part of the South Kensington Museum, along with what is now the Victoria and Albert Museum.

From the end of the 19de century, industrial and engineering museums were established in just about every European country.

In 1903, the *Deutsches Museum von Meisterwerken der Naturwissenschaft und Technik* was founded in Munich.

In 1907, the start had been given for the *Technisches Museum für Industrie und Gewerbe* in Vienna, and in 1908 prestigious exhibitions were organised in Prague and Vienna to celebrate the 60th birthday of Emperor Franz Joseph I. Following that exhibition, Prague also wanted a similar museum, as there were fears that the technologies of the old Czech crown (Bohemia, Moravia and Silesia) would leave for Vienna. It was a committee of professors from the Prague University of Technology, along with individuals from the commercial and banking sectors, that put the cat on the bubble and initiated the forerunner of today's National Museum of Technology in Prague in 1908.

The "Museu Nacional de la Ciència i de la Tècnica de Catalunya".

The demand to create a museum of science and technology in Catalonia was launched at the end of the 19th century by a series of Catalan engineers. The rise of Catalan modernism and the Renaixença catalana[38] also involved a popularisation of science and technology, with republican federalism and anarchism pulling the same cart. Both - with the blooming of Catalan industrialisation and emerging labour movement - sought to promote knowledge of the sciences through education and other avenues.

[38] The last quarter of the 19de century shows the weakening of Spanish power and monarchy, with a short-lived First Spanish Republic (1873-1874) and the loss of Spanish possessions after the Spanish-American War in 1898. It is also the time when the economic and industrial bourgeoisie began to emphasise the region's distinctiveness and common roots. The Renaixença catalana is the cultural movement to revive Catalan and Valencian language and culture, after more than a hundred and fifty years of decline. The first romantic poem in the Catalan language , Bonaventura Carles Aribau's *Ode a la Pàtria* (1833) provided the impetus for this. Architects with strong political opinions like Lluís Domènech i Montaner (1850-1923) and Josep Puig i Cadafalch (1867-1956) provided the materialisation of that movement. The Renaixença fits into the romantic-nationalist movement that led to emancipation movements across Western Europe: the rexurdimento in Gaul, the felibrige in Occitania, the independence movement in Ireland, the Flemish Movement, the risorgimento in Italy and many others.

Museo Nacional de la Ciènzai de la Tècnica (photos: A.Linters

The 1888 Barcelona World's Fair was all about presenting scientific and technical developments. The Ciutadella Park exhibited in the open air and in different buildings objects and elements showing the evolution of mankind's scientific knowledge. The Palau de les Ciències and the Palau de la Indústria were built. Afterwards, the demand arose to make these exhibitions permanent, but the turbulent years of the late 19de and early 20e century[39] delayed such.

When the Spanish Civil War had already erupted but Catalonia was still an independent republic,[40] on 26 March 1937, the Minister of Economy of the Republican Generalitat, Diego Abad de Santillán, published the decree creating a commission to draw up a plan for the creation of the Technical Museum of Catalonia. This was to *"offer the people institutions that will make them aware of the industrial development of the world [...] and in doing so "In a country that, like Catalonia, lives mainly from industry, nothing more is needed than to create a technical museum that, together with a technical and industrial information office whose mission is to collect all the material, can give an idea of the technical progress of our industry"*.

The Civil War and the subsequent dictatorship of General Franco interrupted the project. It was only after Franco's death (1975) that it was brought back from under the dust by the Associació d'Enginyers Industrials de Catalunya (Association of Industrial Engineers), from which, in 1979, the non profit trust Associació del Museu de la Ciència i de la Tècnica i d'Arqueologia Industrial de Catalunya (AMCTAIC) was also formed, with the aim of getting a museum of science and technology off the ground. In 1981, the Ministry of Culture of the Generalitat de Catalunya took over the project, and in 1983 for this purpose it bought the Aymerich, Amat i Jover factory, an old textile mill in Terrassa. In 1984, the factory and its first exhibitions were opened to the public. This year marks the 40th anniversary of the Museu Nacional de la Ciència i de la Tècnica de Catalunya.

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39 Including the economic consequences of the Spanish-American War and the Rif War, Tragic Week in 1909 with bloody confrontations between the army and the workers of Barcelona and other cities in Catalonia , and the dictatorship of Primo de Revera, 1923-1930.

40 In 1931, Spain's republican parties won a major electoral victory and demanded a republic. The leader of the revolutionary committee Niceto Alcala Zamora proclaimed the Second Spanish Republic on 14 April 1931. In Catalonia, the autonomists, joined by Francesc Macià v erenced in the left-wing republican Esquerra Republicana de Catalunya, achieved victory, and Macià proclaimed the independent Catalan republic within the Iberian Confederation on the same day.

The Brussels “Musée de l'Industrie”

When Belgium formed part of the Kingdom of the Netherlands (1815-1830), the *“Museum voor Kunst en Nyverheid”* (Museum for Art and Industry) was founded in Brussels by the Dutch king Willem I with the collections of Jacob Canzius-Onderdewijngaart (Delft, 1771, lawyer, notary, instrument maker, teacher of experimental physics and maior of Emmerich). Willem I's aim was to use a didactic collection, open to the public, to contribute to the training of technicians and to spread the knowledge of science and technology among broad sections of the population.

In 1827, it was decided to build a 'Palace of Industry' in Brussels. This was inaugurated in early 1830, and for a long time served as the Royal Library. After Belgian Independence, however, Canzius refused to take the oath of allegiance to the new regime. He was forced to resign and the museum was confiscated by the new government. It was renamed the Musée de l'Art et de l'Industrie and a new administrative council was appointed on 3 September 1831: Napoleon Bauwens (family of Lieven Bauwens) became director; Nicolaas Mailly (the later astronomer) became deputy secretary; in addition, great figures such as Quetelet and Van der Maelen sat on the Council.

Meanwhile, little was invested in the development of the museum itself. However, in 1832 it was decided to enlarge the collection area *"de manière à les mettre au niveau des perfectionnements qui seront successivement faits dans les sciences physiques et chimiques, les arts et l'industrie."* More specifically, a complete collection of agricultural implements was to be added, as well as a collection of products of the agricultural industry, of the manufacturing industry and of the mining industry of the kingdom. This highlighted technology and industry.

Because the museum did not live up to expectations, after a scathing report, a reorganisation was carried out in 1841. The 'arts' and 'industry' were separated from each other.

The new Musée de 1'Industrie was to include: *"Un dépot de modèles et de machines pour les constructions, les arts et 1'industrie; une collection d'épures et de dessins de machines, qui sera tenu au courant des perfectionnements de la mécanique; une bibliothèque technologique et une collection de produits de l 'industrie...."* Management was entrusted to J.B.A.M. Jobard (1792-1861). Under his direction and afterwards, the im-

portant *Bulletin du Musée de 1'Industrie* appeared between 1841 and 1883 (85 volumina), which not only looked back at collection items from the museum, but also published important studies and contributions on new developments in industry and technology. In 1846, N.E. Mailly published a 241-page inventory of the collection. In 1852, presumably influenced by what was shown at the 1851 London World's Fair, it was decided to expand the collection to include drawings, plans, prints and examples. In 1861, an industrial school was also attached to the museum to reinforce its educational mission. This was clearly inspired by Paris, where the 'Conservatoire National des Arts et Métiers' as a training institute for technicians and engineers lived in symbiosis with the already prestigious museum. Thus, around 1870, the Musée de 1'Industrie would also develop into a combined institution, with the school gradually becoming the most important. In 1932, the School of Industry was transformed into the so-called Institut des Arts et Métiers, which still exists today.

Things went downhill with museum duties. The appearance of the last 'Bulletin' in 1883 was a sign of things to come. The collection of the Musée de l 'Industrie disappeared. No trace of the pieces can now be found (except for two pieces that presumably ended up in the Museum of Folklore of Bruges via the old municipal industrial school, and a few pieces that presumably rest in the collection of the Royal Museums of Art and History).

The 'Musées scolaires'

Meanwhile, there were calls for the creation of didactic collections and the development of 'museums' that would serve to educate tradesmen and craftsmen, and which could provide utilitarian services to schools. Existing institutions were also to provide services to education. For instance, pieces from the Musée de l' Industrie were apparently loaned to the new industrial schools in the provinces.

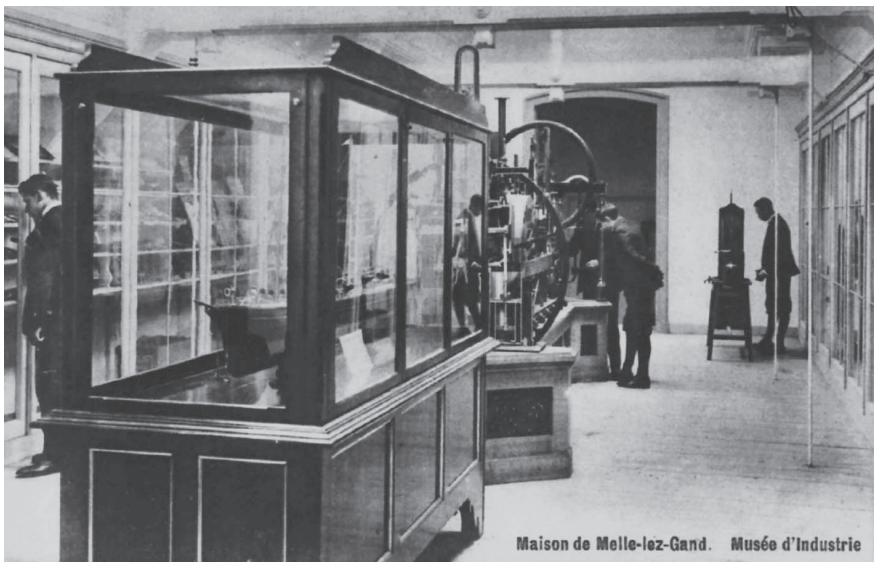
On 24 August 1880, a national school museum, the *'Musée Scolaire National'* was inaugurated in Brussels. This had the mission *ä répandre, autant que possible, la connaissance de tout ce qui intéresse les diverses branches de l 'instruction publique".* Although little is still known about this museum (and even fewer traces of it remain...), it can be assumed that a collection of all kinds of didactic materials and models, which could be

used in schools, was put together. From 1887, the focus was on primary education.

In 1882, on the initiative of the Ministry of Foreign Affairs, a commercial museum, the *'Musée Commercial de l'Etat'* was established, *"dans le but de favoriser le développement du commerce extérieur de la Belgique, en renseignant les négociants et manufacturiers belges sur le marché des affaires dans les pays étrangers ."* To fulfil this mission, examples of foreign products and techniques were collected that the homegrown merchants and craftsmen had to be able to compete with. An extensive documentary collection was also kept available.

Afterwards, and in the wake of these museums, interesting museum initiatives would also be developed in the regions. Some of these could have bequeathed important collections on industry, technology, science and economic developments. Important among these was the emphasis placed on the educational aspect of the new collections.

A royal decree was issued on 12 July 1881, establishing a *Musée d'échantillons de produits commerçables du pays et de l'étranger* (Museum of samples of marketable products from home and abroad) in every Royal Athenaeum, the official State organised secondary schools, in the country.



Musée de l'industrie in Melle (near Ghent) postcard 1909 collection of A.Linters

They often became rich collections of raw materials, semi-finished products, trade goods and small (including demonstration) devices. The collections were not only addressed to schoolchildren, because *L'installation du musée se fait de façon a en rendre l'accès possible non seulement aux élèves pendant les heures de cours, mais pendant les congés et vacances, a toutes les personnes qui, dans le but de s'instruire, expriment le désir de le visiter..."*(art. 6 of the Royal Decree). Shortly afterwards, such museums had been established in Brussels, Antwerp, Bruges, Ghent, Hasselt, Arlon, Mons, Tournai, Liege and Namur.

Four years later, by Royal Decree of 30 April 1885, it was decided to establish cantonal school museums and school libraries. The aim was to create a network of repositories of didactic materials for all subjects, educational publications and prints that the various primary schools could call upon. This was the beginning of the development of rich collections ranging from stuffed birds to electrifying machines.

It was also common in the last century for schools to establish their own collections and 'museums' to have didactic materials for teaching. Graduates, missionaries in distant countries, local artists and craftsmen contributed to this end, not only at the official 'Atheneums' but also at the catholic Colleges. Visual education did then not have the techniques and resources we can fall back on today, and teachers had to rely on collections of this kind to make their lessons attractive and concrete.

Between the two world wars and in the 1950s, didactic films popped up in schools, for which sometimes major filmmakers (such as Henri Storck, Joris Ivens, Bert Haanstra) provided productions, or relying on specialised films produced in other countries.

Very little of all these collections remains. Successive educational renovations, the construction and remodelling of new schools and the strong growth of schools due to the post-war baby boom and the demand for more efficient use of available resources, caused many collection pieces to end up in a dumpster. They took up precious space, and they no longer had any relevance for modern education anyway. Some were taken by interested teachers, others sold to boost school finances. Even the central government itself had lost interest in the old didactic materials after World War II; the 'museums' languished and disappeared. The impressive 'Didactic Films Service' of the former national 'Ministry of National Education' has also

been lost for several years. A last loose-leaf catalogue appeared in 1980. To this was added an appendix in 1982 listing the films that the 'Film Commission Mechanics' deemed no longer suitable for technical education.[41] These films are now said to reside in the Brussels film museum Cinematek, which unfortunately does not (yet) valorise them.

3.2. Heritage cells and heritage depots.

Around 2000, the first intermunicipal 'Heritage Cells' were established in Flanders, involved in movable and intangible heritage. Today, these serve a large part of Flanders, but not yet the entire region. There are now twenty-one intermunicipal platforms, and in addition to these, they were established in the five Flemish art cities (Antwerp, Ghent, Bruges, Leuven and Mechelen) and in Brussels.[42] These were mostly behind the creation of movable heritage repositories.[43] Some ten years ago, the Agency for Immovable Heritage also followed suit by encouraging the creation of immovable heritage deposits.[44] Site visits in 2015, however, led to the conclusion that most of these depots are not suitable for accommodating heavy and bulky objects, specialising in archaeology, paintings, sculptures, and all kinds of smaller items. Only a few have the required loading and unloading facilities and suitable spaces for that purpose. The situation today seems virtually unchanged in that respect.

We can best compare the Flemish efforts (sic) with the repository of the Museu de la Ciència i de la Tècnica de Catalunya, in the monument city of Cervera (near Lleida), which opened in 2016. That depot was made possible thanks to a decision by the Catalan Ministry of Culture and the Catalan Cultural Heritage Agency.

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41 They included the films 'Etude de la Machine à vapeur - Study of the steam engine', 'Comment fonctionne une machine à vapeur', 'Métallurgie du fer', 'Energy, forms and sources', etc... This catalogue and supplement was provided by the Ministry of National Education and Dutch Culture, Department of didactic films, audio-visual media and tutoring activities. It lists 5082 films.

42 https://www.erfgoedcellen.be/

43 https://faro.be/kennis/depotfiches , see also Inge Bertels, Dorien Aertsen & Filip Descamps: ***Cultural heritage depots. Analysis of and building blocks for the development of a programme of requirements for cultural heritage depots in Flanders*** (2015, Study commissioned by the Department of Culture, Youth, Sport and Media of the Flemish Community), https://publicaties.vlaanderen.be/view-file/18030

44 https://www.onroerenderfgoed.be/overzicht-van-de-erkende-onroerenderfgoeddepots

Until 2015, the museum reserves were located in two different spacious warehouses, located in Sils and Gironella, under conditions that were, however, not optimal for preserving the objects. The new depot in Cervera comprises 10,000 m² of storage space, 2,000 m² for laboratories, and spaces for researchers and offices. The fitting-out and conditioning work on the original industrial building took more than a year and was carried out according to all museum criteria. It includes 500 linear metres of industrial shelving system with three levels in height for storing objects on pallets, an area of 2,000 m² for large items, and a real-time monitoring system for fluctuations in temperature and humidity.

As of early December 2015, a total of more than a thousand objects were moved, most of which are large-format and tonnage items such as steam engines, looms and spinning engines,…, graphic art, hydraulic energy, and various means of transportation, which had not been on display.

In addition, the rest of the non-exhibited objects in the collection, some 17,000 pieces of smaller size, remain in the current reserves in Terrassa. The Museu de la Ciència i de la Tècnica also assists local and regional museums and heritage centres in the acquisition and preservation of industrial heritage.

3.3. Preservation of books, documentalia, archives

Archives policy is still largely a federal competence, with the General State Archives and their decentralised archives in the provinces and one intermediate repository in each of the regions, in Flanders in Beveren-Waas. In addition, there are a series of private archives that collect and preserve documents from specific political and ideological movements.

In 1978, the plans archive of Ghent structural engineering company Carels-Van den Kerchove could barely be saved. The documents were ready to be disposed of in a container, because a maintenance crew had interpreted the order to 'clean up the cellars' too literally. Thanks to a lorry mobilised by the Ghent state archivist, Mrs Coppejans-Desmedt, everything could be loaded up and transported to the depot in Beveren-Waas. There it now occupies 98 running metres,[45] the collection has not yet been opened - be-

[45] https://search.arch.be/nl/zoeken-naar-archieven/zoekresultaat/ead/index/zoekterm/carels+/eadid/BE-A0512_106514_104454_DUT

cause reportedly none of the archive staff is able to process the technical plans.

When the Dutch volunteers of the Stichting Stoommachine Oisterwijk,[46] who are restoring a Carels steam engine in this municipality near Tilburg, went looking for details in Beveren-Waas, they came home with a cold shoulder.

In 1985, on the initiative of the Lafarge-Coppée industrial group and the General State Archives, the non-profit trust *'Association pour la Sauvegarde et l'Exploitation des Archives Industrielles Belges/ Vereniging voor het Behoud en de Valorisatie van de Belgische Industriële Archieven'* (Association for the Preservation and Valorisation of Belgian Industrial Archives) was founded, with the aim of promoting the rational management of archives of private and public companies and industrial-commercial groups. In 1993, the name of the association was changed to *'Association pour la Valorisation des Archives d'Entreprises - Vereniging voor de Valorisation van Bedrijfsarchieven'*. Unfortunately, we did not notice many activities of this organisation in Flanders. The latest filing in the Belgian Official Gazette concerns a translation of the French-language statutes and dates from 20 February 2024. The website is French-language only, and the latest additions under 'actualités' appear to be from 2016.[47]

When the Regions came into being (1980), the federal Ministry of Public Works was split between the Flemish, Walloon and Brussels Regions. The historical holdings also had to be divided. After the huge photo collection was lost without trace for years, it recently resurfaced, and was inventoried and opened up by the General State Archive.[48] Where the collection of films, objects (such as a collection of surveying equipment) is located is a question.

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46 . https://destoommachine.nl/

47 https://www.avaevvba.be/ - the website does mention *'The website of the Association for the Valorisation of Corporate Archives will eventually be bilingual. The Dutch version is under construction'*

48 https://www.arch.be/index.php?l=nl&m=nieuws&r=alle-nieuwsberichten&a=2023-05-31-de-fotografische-dienst-van-het-ministerie-van-openbare-werken-geeft-zijn-geheimen-prijs-bijna-100-jaar-fotografie-in-belgie

CASE: the library of the former Ministry of Public Works

In the early 1980s, the Flemish Association for Industrial Archaeology (VVIA) was asked by a Public Works official if they were interested in 'some' old books one wanted to dispose of. Upon going on site, it turned out that the library's five rows of compact storage in one of the WTC towers near North Station in Brussels had been 'written off'. There were two rows allocated to the Walloon Region (which were already empty on the first visit), one row to the Brussels Region (from which some shelves had been emptied) and two rows to the Flemish Region. The latter had decided to get rid of all the books and periodicals, dating from the period between 1830 and the 1970s.

VVIA was able to arrange for volunteers to pack books and magazines in boxes after office hours. Every Friday boxes were picked up by a truck from the Izegem firm Strobbe, which drove back to Izegem empty after deliveries in Brussels. The boxes were then deposited in members' garages somewhere in South-West Flanders, in a corner of the company. After a while, they could be collected at the old tobacco factory in Menen, but after a coalition change there and new zoning plans for the site, everything had to go. They then went to the old power plant in Zwevegem, until... in the summer of 2018, the Leiedal inter-communal association announced that all the books would end up in the paper container. Leiedal also acts as Heritage Cell and Intermunicipal Immovable Heritage Service (IOED) for the region. But in today's neo-liberal (heritage) philosophy, every square metre has to 'pay off' - and a library does not.... The boxes stood in the way of rezoning. After negotiations, respite was given until the end of February 2019 to move everything to a safe place.

Volunteers pitched in to check all the boxes, take out the magazines, sort and inventory them. Remarkably, while hard work was done every weekend, no one from the library and heritage sector came to see, let alone lend a hand. We did get responses to calls in the press from collectors, bric-a-brac and second hand dealers, who were interested in taking over books and magazines 'for free'....

Talks were under way in early 2019, through some West Flanders politicians, to move everything to a temporary destination. There,

the selection and inventory could continue, as by now it was clear that this would be a long-term work. Unfortunately, an advice was leaked from the ETWIE (Expertise Centre for Technical Scientific and Industrial Heritage, part of the urban Ghent Industrial Museum) that the collection would be 'worthless' because several series were also kept scattered in libraries in Belgium. It ignored the unique value of the totality, the importance of finding a rich library in one place, or on the contrary having to move from library to library if one wanted to do research. Professionals can do that within their working hours, for volunteers it often becomes difficult.

To make a long story short. The note blocked a solution and left the hard-working volunteers with a pile of frustrations. Until suddenly, like a deus ex machina, a solution emerged.

Thanks to the Museum of Contemporary Art Verbeke Foundation in Kemzeke, the whole thing could be brought to safety by truck in extremis. The library now rests in a large sealed container at Kemzeke, as an artistic 'time capsule'. The whole collection has been preserved (and that's already a lot) and when someone in ten, twenty, fifty years or over the next century is interested, the time capsule can be solemnly opened.

An uncoveted library collection thus became a unique 'work of art'.

Moving the library to The Verbeke Foundation (photo A.Linters)

3.4. Intangible Heritage

With rapid technological change and progress, much old knowledge no longer appears to be adapted or applicable.

Craftsmanship is part of the intangible cultural heritage that resides in people's heads and hands. It are knowledge and skills rooted in tradition. Passing on craftsmanship is necessary to keep it alive.

The 'Compagnonnages'

The French 'Compagnonnage' goes back to the medieval system, whereby an apprentice travelled through France (the 'Tour de France'), gaining knowledge and experience from practical experience in yards, thus rising to become a journeyman and later a master. This system still exists today and was inscribed on the list of intangible cultural heritage[49] by UNESCO in 2010 as *'Le compagnonnage, réseau de transmission des savoirs et des identités par le métier'*. The 'Compagnons du Tour de France',[50] headquartered in Paris, have 16 centres across France. In their base of Tours, they have a beautiful museum in the old Saint-Julien abbey, where they exhibit their attributes, tools and realisations.[51] In smaller training centres, they also have museums and exhibitions, including in Arras, in a sadly lesser-known museum in Robespierre's old house, they display the 'master-works' of their companions.[52]

Master apprentice track

For several years now, building on the previously existing UNESCO programme *Living Human Treasures*,[53] the Flemish Community has been offering grants for passing on craftsmanship. They are intended as financial support for professionals who apprentice one or more apprentices for several months (max. two years) to teach them the tricks of the trade.[54]

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49 https://ich.unesco.org/en/RL/compagnonnage-network-for-on-the-job-transmission-of-knowledge-and-identities-00441

50 https://compagnonsdutourdefrance.org/

51 https://www.museecompagnonnage.fr/

52 https://www.leparisien.fr/etudiant/sortir/li-musee-du-compagnonnage-maison-robespierre-arras/ https://www.leparisien.fr/etudiant/sortir/li-musee-du-compagnonnage-maison-robespierre-arras/

53 https://ich.unesco.org/en/living-human-treasures

54 https://www.vlaanderen.be/cjm/nl/cultuur/cultureel-erfgoed/subsidies/beurzen-voor-het-doorgeven-van-vakmanschap-een-meester-leerlingtraject

Maintain/operate what can still deliver products.

Based on old techniques, products can still be manufactured in an economically viable way, albeit for niche markets.

The European COSME project 'Genius Loci' sought to highlight the industrial heritage of SMEs, with surviving traditional small-scale businesses standing out. In Malta, attention was drawn to 'Malta Tiles', where decorative cement tiles are still manufactured in an artisanal way.[55] Between 60 and 80 tiles are manufactured per person per day, which find smooth outlets in restoration and mansions despite their high cost.

In Tisselt near Antwerp, the tile factory Rottiers,[56] a scheduled monument since 1998 but now heavily dilapidated, includes the technical installation. The site was acquired by the intermunicipal association IGEMO, which is preparing a rezoning.[57] In the process, all remaining tiles and equipment will be inventoried, but the old production will not be reactivated. The tile factory and the old dairy next to it will mainly be used for housing.

The Centre d'Artesania Catalunya

In Catalonia, the Consorci de Comerç, Artesania i Moda[58] in Barcelona owns a centre *'Centre d'Artesania Catalunya'*. It is a service of the Catalan government, with the general aim of promoting and stimulating the commercial and craft sector to foster its competitiveness and quality, at national and international level. This includes the modernisation and adaptation of old practices to today, in terms of production, design, image and advertising, brand creation and marketing. The service also promotes the quality and excellence of craft heritage. Old techniques and knowledge are translated to today and to contemporary design, and the products thus created are marketed.

55 https://vimeo.com/546707952 and their website https://maltatiles.com/
56 https://inventaris.onroerenderfgoed.be/erfgoedobjecten/1844
57 https://igemo.be/erfgoed/erfgoedprojecten/tegelfabriekwillebroek/
58 https://ccam.gencat.cat/ca/inici/

4. MANAGEMENT

Preservation requires appropriate management. What can, cannot, must be done?

Recent protection dossiers for immovable heritage usually include management objectives. These should help owners and users to maintain or improve heritage values as much as possible. They respond to the heritage values, heritage elements and heritage features of the protected property.[59]

It was noticeable that in many files for lifting a protection, the argument was drawn from years of decay against which no action, or no effective action, was taken. Certain sites deteriorated over the years, while citizens from the neighbourhood tried to keep on preservation.

It is necessary to keep a constant eye on it, whether by government or private individuals - and make resources available to them - not necessarily financial resources.

Case in point is the old engine building that remains from the brickworks of the 'Briquetteries et Tuileries d'Oedelem', some 10 km from Bruges. The engine room with its gas engine and gasification installation remains today a last witness of that activity, and were legally protected on 13 October 1986[60] - but subsequently left to their fate.

Recently, a group of citizens and local politicians took matters into their own hands, and they are seeking to restore and repurpose and open up the site.[61]

But keeping an eye on things is crucial not only for monuments, but also for movable collections.

[59] https://www.onroerenderfgoed.be/de-beheersdoelstellingen-en-de-voorschriften-uit-het-beschermingsbesluit
[60] https://inventaris.onroerenderfgoed.be/erfgoedobjecten/89247
[61] https://www.hetnieuwsvanwestvlaanderen.be/oude-steenbakkerij-in-oedelem-moet-site-met-een-duurzame-toekomst-worden/

CASE : La Belgica's steam engine

In 1980, with credits in the context of the 150 Years of Belgium celebrations, the province of Limburg launched an 'Industrial Heritage Project', which was transformed into the Provincial Museum of Industrial Heritage at the end of the celebration year. A number of lines were set out to work around, and one of them was energy - with the importance of the Limburg mines, of course, but also the rich watermill heritage in mind. In that context, a number of pieces for a museum collection were acquired.

Early 1981, a beautiful tandem-compound steam engine manufactured by the company Carels-Van den Kerchove-SEM of Ghent in the former paper and cardboard factory 'La Belgica' in Turnhout was offered by a demolition company, with the message of 'you have to say yes now, otherwise it will go into scrap'. On the spot an agreement was quickly made to acquire the machine for the museum.

The engine was dismantled by a team from the provincial department for art heritage (which proved no easy task) and then transported to Limburg on a 'borrowed' truck from the Bokrijk Open Air Museum (whose cargo box proved smaller than the machine). It ended up - along with other pieces - at the old Houthalen mining plant, but after the museum plans were dropped, the pieces orphaned and - also due to the closure of the coal mines - had to move several times and lost track. In 2016, a pile of 'old iron' was found under the Beringen coal washing plant, said to be industrial heritage items that at the time had been acquired by the province of Limburg. Since Bert Van Doorslaer, for years the industrial heritage specialist of the province, had passed away in the meantime, no one was apparently able to say or point out what had ended up in the bowels of the Beringen coal mine - The remains had to be removed as soon as possible to make way for the redevelopment work in progress. It indeed turned out to be the remains of the collection of the not-realised industrial heritage museum, including a diesel engine rescued at a syrup factory in Borgloon, a dynamo and an alternator, an iron water wheel, the projectors from the former cinema in the Beringen Casino. Among these was also the dismantled steam engine from Turnhout, parts of which had broken as a result of the transports, the fittings and the

brassware obviously gone. It was proposed to get rid of all this 'old iron', but as these were museum objects acquired at the time, they could not simply be disposed of as sold as scrap. At least the museum rules of disposal had to be followed.

The remains of the steam engine were therefore briefly transferred to a temporary depot in Genk. The machine was offered back to Turnhout, where they preferred to see the chalice pass, then unsuccessfully to the Flemish museums. A number of other possible paths were suggested, such as setting up the machine as a monument in the courtyard of the repurposed Carels site at Dok Noord in Ghent, or on the forecourt of Thor Park, 'the hotspot for technology, energy and innovation' in Genk on the site of the former Waterschei coal mine.

After all runs were exhausted, the machine was picked up by a collector from the Netherlands. Where it is now and where the other ‘remains’ are is not known.

5. Interpretation and presentation

5.1. We are not proud of our industrial heritage.

When in 1985 I visited the exhibition *'Catalunya la Fabrica d'Espanya (1833-1936): Un Siglo de Industrializacion Catalana'*, the message struck me. It was "why does Catalonia now have such an industrial and technological edge? Simply because we always had it". Industrial history and heritage were used as motivation for the region's continued industrial, technical and economic expansion. The exhibition was co-sponsored by the engineer’s association Associació d'Enginyers Industrials.

In 1985, Ghent also hosted the second edition of the Flanders Technology International fair. It was supposed to herald and accompany the Third Industrial Revolution in Flanders. Attention to the first and second industrial revolutions and how they helped define the Third was lacking.

We do not know enough about our industrial and technical heritage and do not sufficiently address it.

In the late 19de century, the North Campine region was the world's leading zinc producer. Little remains of this, except for the first workers' quarters

and one zinc condenser vessel accidentally preserved in the collection of the Lommel local Museum.

What remains of the Limburg coal mines is on an international level: the coal mine of Beringen is the most complete site in Europe, there are not only the mine buildings (with the large coal laundry), but also the surrounding workers' quarters with all their amenities, the remains of the transport infrastructure with the coal port,... When in 2018, in the context of the European Year of Cultural Heritage, we organised a European meeting on mining heritage in Winterslag and Beringen, we received the astonished question from the northern French 'bassin minier UNESCO' whether there were mines in Limburg too.

Among the big stories, mention must also be made of the story of the Olen plant, which produced radium from Congolese ore from 1922 and where Marie Curie was a regular visitor. From 1925, cobalt was also processed here and the Olen plant became a world leader. A germanium plant was added in 1953, and it would play an important role in the manufacture of the first transistors, among other things. The BR1 reactor in Mol was the first civilian reactor in Europe in 1956 and was recognised as a Nuclear Heritage Landmark by the American Nuclear Society in 2005. It is the beginning of the story of Euratom and European unification.

But Flemish industrial traditions rely mainly on SMEs, and they too often remain under the radar. We know too little about what our SMEs once meant, and we also look little at what Flemish companies performed across borders. A few examples

On 28 November 2011, a 1922 'aéromoteur' in Pargues (Aube), France, was protected as a 'monument historique'. It is a wind turbine built by the firm R. Van Sante-Baetens from Wetteren near Ghent, which from the 1890s excelled all over Europe with their 'Aéromoteur Belge'. They received the highest award (a 'grande médaille d'or') for their technology at the World Exhibition in Paris.

The company Lecoq from Halle near Brussels built an iron railway bridge in Durcal, near Seville, that the neighbourhood thought was Eiffel's (and therefore wanted it protected as a historical monument), and the Société Anonyme de Construction et des Ateliers de Willebroeck built the famous Luiz I bridge in Porto (beating Eiffel in the tender).

5.2. More attention to our industrial past and heritage in education?

What do students at the end of secondary school know about Flanders' industrial past, our inventors, technicians, the men and women who built our contemporary society????

In the anniversary issue of the US magazine 'Science' some 40 years ago (Nov 1984), dedicated to *'Century of Sciences: 20 discoveries that changed our lives',* the first name mentioned was that of Ghent-based Leo Baekeland...

In response, more than two hundred secondary school students in West Flanders were asked if they knew the name of this famous man. The results were downright disastrous. At best, a connection was made with the 'Bende van Baekelandt', a gang of robbers that terrorised the region in the late 18th century and who's story is still embedded in the collective memory.

There also appeared to be a cyclist with a similar name cycling around. A relationship between Leo Baekeland and Bakelite (to the extent that the term 'Bakelite' was known to them) was not suspected. Not to mention Baekeland's contribution to the photographic industry (the 'velox paper' that underpinned the Eastman-Kodak empire).

In March 1999, Time Magazine counted Baekeland among the 100 most important scientist-inventors of all time. But in the contest organised by the Flemish TV channel VRT 'The Greatest Belgian' (2005), he only landed in 32e place, after the cyclist Eddy Merckx (3), the tennis champion Kim Clijsters (14) and the author of comic strips Willy Vandersteen (29), but ahead of the singer Arno (34) and tennis champion Justine Henin (37)

Has the situation improved now?

I doubt such, especially when I look through recent history textbooks for secondary schools

There is undoubtedly equal ignorance about the lives and deeds of other great inventors such as Arthur Vierendeel (diagonalless trusses), Lieven Gevaert (photography), De Ridder (railways), Walschaerts (locomotives), Magnel (concrete calculation and prestressed concrete), the Van Steenkiste brothers (flax industry), and so many others.

We often know more about life at the time of the Egyptians, or Henry VIII's wives, than we do about the creation of our industrialised society and those who contributed to it.

In the 'Canon of Flanders' – things every Flemish citizen should know about the region's past - the industrial history is limited to the mule jenny, Lieven Bauwens and Cockerill, and then the social struggles through the figure of Emily Claeys.

It proudly unpacks the story of the first train ride between Brussels and Mechelen in 1834, which, despite what we are always wrongly led to believe, was not the first on the European continent. In 1827, the *Compagnie du chemin de fer de Saint-Étienne à Lyon* was already building and operating a railway between the two towns of the same name. The carriages were pulled by steam locomotives designed by Marc Seguin, not Stephenson locomotives imported from England and subsequently copied

5.3. What story are we telling?

Every site, every object tells a story of people. How do we tell and present it?

In 1845, Ghent had 427 streets with 14,372 buildings, churches, mills, warehouses,... included. 3586 houses were in the 'beluiken' (cul-de-sacs, courtyards) while the census also reported 226 inhabited cellars. Two doctors wrote a booklet on the condition of the cotton workers in Ghent,[62] in which they described one of the largest workers' housing complexes, the so-called 'Batavia' cul-de-sac, which was demolished after 1883 for the construction of the engineering department of Ghent University. Although they said this town-in-the-city was not even the worst they encountered, their description leaves nothing to the imagination.

[62] J. MARESKA & J. HEYMAN: ***Enquête sur le travail et la condition physique et morale des ouvriers employés dans les manufactures de coton à Gand*** (Gand, F. & E. Gyselynck, 1845)

Goudensterstraat (photo A.Linters 1976)

Batavia se trouve dans la partie haute de la ville (...) Il a trois issues (...) Ces entrées n'ont que la largeur d'une porte ordinaire et peuvent facilement être confondues avec celles des maisons voisines. Il a 100 mètres de longueur sur 30 mètres de largeur moyenne, se compose de 117 habitations et comprend quatre rues, dont trois parallèles et une transversale. Les pe-

tites demeures qui les bordent sont disposées de manière à ce que celles qui font face dans une rue sont adossées à celles qui font face dans une autre. Les rues ont 2,70 de largeur et tiennent lieu de cour; un ruisseau coule par le milieu et des cordes sont tendues d'une façade à l'autre pour le séchagedu linge. On y compte six latrines et deux pompes à l'usage de toute la population. A l'extrémité de la rue transversale se trouve un égout considérable, où viennent aboutir tous les ruisseaux et les conduits des latrines (...)"

After calculating the surface areas, they concluded that each house occupied an average of 17 sqm. Most houses had only a ground floor that served as living room, bedroom and kitchen, some had a floor that could be reached by a ladder. Taking into account that each household consisted of five people on average, the total population of 'Batavia' counted 585 inhabitants, each of whom could claim 3.4 sqm.

With few exceptions, these cul-de-sacs were built by speculating middle classes, shopkeepers, pub owners, bakers and butchers, and by individuals who lived off their own investments, the 'sans profession' in the population registers. Renting out these poor houses was very profitable, as Mareska and Heyman calculated: between 17% and 18% a year....

At its peak, in 1880, there were 697 houses in this kind of courtyards in Ghent, out of a total of 7404 houses (i.e. about 10%) and 29,181 people living in them out of a total city population of 173,816.

Today in Ghent, two ‘beluiken’ are legally protected, against just about all the remaining homes and castles of textile mill owners.... The image of 19de century society thus given is that of the luxury of a ruling class....

A renovated courtyard today in Ghent, moreover, gives a different "image" than what its inhabitants had of it in the 19de century. I once accompanied a teacher with a class of students in Ghent, and when we visited the renovated ‘beluik’ of the Gouden Sterstraat, one of them asked the question "why did the workers have to fight against poor housing conditions?". A house in it was offered for sale by a property developer as a "uniquely located town house in a green and car-free residential area".

After restoration, repurposing and tourist access, we often present a different picture from reality - even in other heritage sectors.

Many visitors are attracted by the romance of 'damals', the past, and we offer them what they ask for. Interested visitors can visit recreated mining galleries, but experience neither the speed at which a lift fell down the shaft (often 8 metres per second), nor the heat, noise, underground dust and constant sense of danger. They are not black after the visit.

I came in 2015 impressed by the criticism of local organisations in the textile city of Łódź in Poland, on the repurposed textile mill where Andrzej Wajda famously shot the 1975 film 'Ziemia obiecana' (The Promised Land).[63] The factory where the film was shot is now a shopping centre with offices, hotel, sports facility, *Manufaktura*.[64] At the moment I visited, no reference to the labour past was (yet) built in. Now a cultural section has been added consisting of a museum of modern art, a children's museum of science, the 'Muzeum Fabryki'[65] factory museum and a centre for international fashion promotion.

Its renovation into a shopping centre started in 2003 on the initiative of French real estate group Apsys,[66] which means it is mainly home to French brands and is also the seat of the Alliance française de Lódz.

How to preserve and present real tangible and intangible history is a key discussion point in the heritage sector. Especially for the more recent - often still loaded - industrial heritage, that question has to be asked in any approach. How 'beautiful' or how 'ugly' is that past, and how beautiful or ugly do we make it?

6. Today and tomorrow?

The Museu de la Ciència i de la Tècnica de Catalunya in Terrassa is an institution of the Catalan government. It is funded by the Generalitat and underpins a general policy around the study, conservation and accessibility of immovable, movable and intangible industrial, technical and scientific heritage.

63 https://www.inyourpocket.com/lodz/the-promised-land-lodzs-industrial-heritage_75350f
64 https://www.manufaktura.com/
65 https://muzeumfabryki.com.pl/
66 https://www.pappers.fr/entreprise/fonciere-apsys-444839302

In Flanders, powers are divided and fragmented. Our government seems to have shifted the entire responsibility for movable and intangible heritage to one city.... For immovable heritage, the emphasis is mainly on preserving and repurposing traditional and religious heritage, although recently, incredible but true, a campaign was launched to schedule chip shops as historic monuments.

In1975-1976 Flanders, with its decree, was suddenly at the forefront of caring for industrial heritage. But since a quarter of a century we first dropped to the peloton, now to the rear.

With the prospect, after the elections of June, of a new Flemish Parliament and a new government, a plea must now be made to also develop a global policy in Flanders around our industrial and technical heritage, the history of industry, engineering and science in Flanders. In doing so, the government must assume more responsibility, together with civil society, citizens, companies, research and training institutions.

Unlike other regions, we have missed many opportunities in past decades to push forward the uniqueness of our technical developments. To much has been lost.

NOTES: (All websites were verified between 22 and 30 April 2024)

Laudatio Lucia Allais.

Maarten Liefooghe

Lucia Allais is a tenured Associate Professor at the Graduate School of Architecture, Planning and Preservation of Columbia University in New York, and a member of the Center for Comparative Media at Columbia University, and Director of the Temple Hoyne Buell Center for the Study of American Architecture.

This triple affiliation within Columbia University may very well represent prof. Allais's profile as an architecture historian who casts the research object 'architecture' time and again widely and interdisciplinarily: architecture as used in governance and politics, as a medium, as a matter of science and technology, and of aesthetics. Also pointing at this cross-disciplinary profile is the fact that since 2012 prof. Allais has been an editor of *Grey Room,* a most esteemed theoretical journal in Architecture, Art, Media and Politics.

Lucia Allais obtained a Bachelor's degree in Civil Engineering and Architecture at Princeton University, and a Master of Architecture at Harvard University's GSD in 2001. In 2008 she obtained her PhD degree in History and Theory of Architecture at MIT, with a dissertation supervised by Mark Jarzombek. She then worked for more than 10 years at Princeton University, as a postdoctoral fellow, as Assistant Professor and since 2018 as tenured Associate Professor in the School of Architecture, and as director of the Interdisciplinary Doctoral Program in the Humanities. Then, in 2019, prof. Allais joined the Faculty of Columbia University.

For the occasion of this Sarton medal award, our librarian colleagues at the Faculty Library took the much appreciated initiative to assemble a pop-up display with selected publications by Lucia Allais, gathering books such

as the much-praised 2018 monograph *Designs of Destruction*, to which I will return, and edited books, several of which issuing from *Aggregate: The Architectural History Collaborative* of which Lucia Allais was one of the founding members in 2005.[1] To fill their glasscase the librarians could also pick from many peer-reviewed journal articles, contributions to exhibitions and exhibition catalogs, essays, translations, occasional criticism in architecture magazines and even a surprising early contribution to Rem Koolhaas' and AMO's trashy-glossy book Content from 2004.

It may not sound very decorous to start this overview of Lucia Allais's academic track record with this *Content* book, published with Taschen, but we can retroactively and speculative read in it some of the key themes of the medallist's later work.

The article that Lucia Allais and Michael Rock contributed to Content is titled "_____is history", and its genre could be called an infograph essay.[2] It presents AMO's analysis of the rhetorics of Silicon Valley's *Wired* magazine as a perpetual promise of the next big thing, but also AMO's consultancy about how *Wired* could possibly reposition its editorial line after 9/11 and other crises had brought an end to the optimism of the 1990s which *Wired* had been voicing. The Content book was also the publication where we first found Rem Koolhaas and AMO explicitly engage with the theme of preservation, as it included articles about the Hermitage in Moscow and about historic substance in Beijing under threat by a boom metabolism of (re-)urbanisation. In Content we can thus find aphorisms such as: "Like the steam engine, preservation is an 'invention', in fact it is part of the repertoire of inventions that define modernization"; and we can find simplistic speculations that nevertheless strike and stick, such as the proposal to project a crop-rotation-like preservation regime onto China's Capital City agglomeration: "The most visionary approach to preservation would be to use it in a prospective rather than a retrospective way by declaring different areas of the city to be preserved for different periods of time."[3]

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1 Lucia Allais, Designs of Destruction: *The Making of Monuments in the Twentieth Century*, Chicago and London: The University of Chicago Press, 2018.

2 Lucia Allais and Michael Rock, "_____is history," in Content, Rem Koolhaas, Brendan McGetrick and &&& (ed.), Cologne: Taschen, 2004: 106-115.

3 Rem Koolhaas, Brendan McGetrick and &&& (ed.), *Content*, Cologne: Taschen, 2004: 458-459, and 465.

In her historical research Lucia Allais has scrutinized exactly that, the modern interdependencies of destruction and preservation of cultural monuments, and in her writings she has established much more precise arguments about the design work – in a wide sense – that historic monuments also result from – work done not only by architects but by diplomats, intellectuals, art historians, archaeologists, lawyers, and engineers, in institutions and geopolitical governance, and through evolving modern technologies of protection, destruction, and mediation.

One of Lucia Allais's best known articles is titled "Integrities: The Salvage of Abu Simbel," published in Grey Room in 2013.[4] Bibliometric data can today assert that this article is the most downloaded one from the Grey Room website. It was also one of the first articles by Lucia Allais that I read, in 2016, and I remember how I was struck and excited to discover this piece of historical analysis and essayistic narration, combining project criticism with institutional, discourse, technical and materials analysis all at once. In this article Lucia Allais discusses the spectactular international salvage operation led by Unesco of two Egyptian Ramesside temples of Abu Simbel, hewn in the sandstone cliff along the Nile. It was threatened of being drowned because of the planned construction of the Aswan High Dam and was eventually 'saved' by cutting it up and moving it some 200 meters over and 65 meters up.

The case exemplifies how the scale of what was being preserved, and the scale of preservation's institutional organizations were dramatically increasing in the 1960s, as had been set out in several histories of (architectural) preservation already. Lucia Allais warns, however, that established historical narratives about the progressive enlargement of the preserved historic monument risk to leave out major technical historical developments; they seem to presuppose that "architectural monuments stayed the same while around them mentalities changed".[5] But, Allais argues, technical and material changes that affected architectural monuments can't be left out of this story, as they also supported the rise of modern preservation in the middle of the 20th Century and changed the preserved 'objects'. Thus we find Lucia Allais not only attending to the mediatisation and the geopolitics of this case, but focusing on the international engineering competition for the Abu Simbel salvage project; discussing techniques like the

4 Lucia Allais, "Integrities: The Salvage of Abu Simbel", *Grey Room* 50, Winter 2013, 6–45.
5 Allais, "Integrities," 8.

invention of a mortar of Nubian sand to join the cut up stone and mask these joints, or an epoxy-glue injected into the stone to prevent it from crumbling during the manipulations. And we find Lucia Allais evaluating how this high-modern technological assemblage has been aging since: "The technology that has aged most is the injected epoxy. Once invisible, it has over time darkened the overall appearance of the temple front by changing the way light penetrates its internal structure."[6] This observation of aged technologies "rendering visible mediations that were previously invisible" is key to Lucia Allais's conceptualisation of architectural preservation as a medium, subject to its own historical development, on top of and enmeshed with the historical development of the architecture it mediates.

The story of the salvage of Abu Simbel is also the last of the five chapters that make up the 2018 monograph *Designs of Destruction: The Making of Monuments in the Twentieth Century*, five "episodes when the survival of monuments was debated and designed within international organizations".[7] The focus is on the means used to turn architecture into cultural monuments. The four other chapters, preceding the Abu Simbel episode, discuss respectively the 1931 Athens Conference for the conservation of historic and artistic monuments and Nicolas Balanos' techniques of anastylosis experimented with in the Parthenon; the Allies' lists of monuments to be avoided from being destroyed in World War II; the American bombing of Europe between 1943 and 1945; and UNESCO's expert approach to museums and heritage in decolonised states in the 1960s and early 70s. In her review of this book Mari Lending has rightly contrasted this book with other histories of mid-century international preservation, for the way it treats monuments not solely as 'things' to be saved but as "products of deliberate design work."[8] Lending concluded with a phrase that's perfect for this laudatio: "In its erudite complexities, *Designs of Destruction* strangely reads as a page-turner."[9]

Let me finally point at two more recent articles to evoke the spectrum of tonight's medallist's work. On the one hand, the article "Concrete is One

6 Allais, "Integrities," 35.
7 Allais, "Designs of Destruction".
8 Mari Lending, "A review of Lynn Meskell, *A Future in Ruins: UNESCO, World Heritage, and the Dream of Peace*, Oxford and New York: Oxford University Press, 2018, and Lucia Allais, *Designs of Destruction: The Making of Monuments in the Twentieth Century*, Chicago and London: Chicago University Press, 2018," Architectural Histories 7(1): 17, Summer 2019: 6.
9 Lending, "A review of," 8.

Hundred Years Old. The Carbonation Equation and Narratives of Anthropogenic Change," cowritten with environmental engineer Forrest Meggers.[10] This article engages with the history, and the implications, of the discovery of the so-called "Carbonation equation," the formula that allows to calculate how soon reinforced concrete will start to rotten. On the other hand there is "Mood for Modernists," a critical introduction to new English translations that Lucia Allais and Andrei Pop have also cared to make and publish, translations of three less-known essays by Viennese art historian and conservator Alois Riegl from 1899, 1901 and 1903.[11]

Historicizing architecture, including practices of preservation, between environmental material chemics and esthetic concepts that may age or endure, the academic work of Lucia Allais resonates strongly with the way in our department and our program in engineering and architecture, we search to understand architecture: both in studying historic architecture and thinking what architecture or construction history can be, and in engaging with the spectrum of contemporary practices of designing, maintaining, disassembling, governing, and criticizing architecture and city making. In many ways such approach also speaks to the critical moment we live today. So we are very honoured that Lucia Allais accepted this Sarton medal nomination and accepted to present new research work to us tonight.

[10] Lucia Allais and Forrest Meggers, "Concrete Is One Hundred Years Old: The Carbonation Equation and Narratives of Anthropogenic Change," in *Writing Architectural History: Evidence and Narrative in the Twenty-First Century,* Aggregate Architectural History Collaborative (ed.), (Pittsburgh: University of Pittsburgh Press, 2021), 75–89.

[11] Lucia Allais and Andrei Pop, "Mood for Modernists: An Introduction to Three Riegl Translations," *Grey Room* 80, 2020: 6–25.

The Protective Matrix: Sandbagged Monuments and the "Humanization of War" in the 20th Century

Lucia Allais

I am deeply honored to receive the Sarton Medal and to have the opportunity to deliver this lecture. I would like to extend my gratitude to the Sarton Committee, to my colleagues in the School of Engineering and Architecture, and to the audience for attending tonight.

My lecture tonight concerns material I began encountering in archives while I was writing my first book, *Designs of Destruction*. The book was motivated by one question: how did so many architectural monuments survive the massive destructions of the middle of the 20th Century? I proposed to find the answer in a number of techniques that made monuments' protection practical, possible, and strategically useful during various emergencies. During World War II, for example, a policy of monument avoidance was invented in part because the development of new military technologies like aerial photography made it possible to plan bombing raids with some degree of precision, and in part because existing forms of art-historical knowledge, such as lists and maps of monuments, could quickly be transformed into military intelligence. By the end of this research, I concluded that "the monument," as an architectural type, had been redefined as an architectural type, had been redefined. Between 1931 and 1972, a monument went from being defined as a building with "artistic or historical" significance, to a building whose main characteristic was its capacity to survive destruction. As a result, I argued, many of the international legal heritage instruments that exist today – such as UNESCO's 1972 World Heritage Convention – originated less from lofty humanist ideals, than from the consolidation of

experiences of monument survival during emergencies, which had accumulated into an international norm.

Every time I visited archives of those involved in these emergencies, however, I also found evidence of a different kind of protection. For every aerial bomber who flew over a monument with a target map annotated with what "not to bomb," there was a conservator below, working inside the monument to prevent destruction. I found their journals, letters, their logs, and, especially, I found innumerable photographs of buildings, statues, and parts of buildings protected with sandbags.

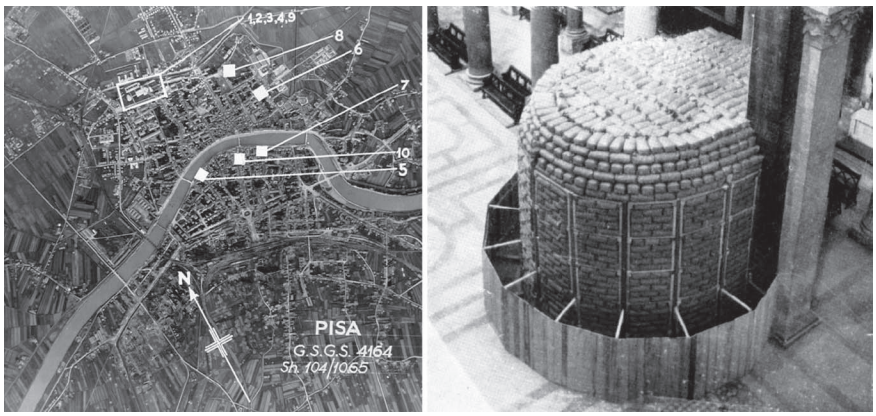


Figure 1. Pisa's monuments protected from above and from below. Left: Mediterranean Allied Air Forces, Annotated Aerial Photograph of Pisa (1944). Right: Italian Fine Arts Ministry, photograph of Sandbagged altar in the Pisa cathedral, 1942

I am showing you an aerial photograph of Pisa annotated with monuments to be avoided by the Allies, and a pier in the Pisa cathedral protected by sandbags. As you can see, the protection was not improvised – it had also been delicately planned, and every bag had been laid just so.

In other words, monuments in World War II were protected not only from above but also from below. This change of perspective requires us to rethink the question of monuments' survival. In the book, I argued that architectural monuments became "international heritage" by acting as a kind of global infrastructure, territorial markers whose significance derived almost entirely from their location. Considering protective structures on the ground, in contrast, forces us to reckon with an entirely different quality of art and architecture: its affective power, real and imagined. It is this power,

and its gradual incorporation into conceptions of warfare over the course of the 20th Century, that I will address tonight. I begin in 1942.

An Italian Photographic Album

In 1942, the Italian Government published a photographic album documenting the work that its cultural ministry had performed to protect the country's architectural monuments from the possible damages of war. Far from a dry and technical report, the book was a lavishly-illustrated, large-format volume. In page after page, carefully-staged photographs showed how scaffolding had been built around church altars, entrance portals, colonnades, statues, fountains, sometimes entire triumphal arches. These scaffolds had then been filled-in with sandbags, encased with brick, or used to hang sheets of plywood, particle board, and, in one case, mattresses..

A handful of monuments, such as Trajan's column in Rome, had even been partly encased in reinforced concrete. The result was visually striking, and the book's introduction invited the reader to be "moved" by the sheer sight of these protective structures:

> Oh how moving it is, to see our works of art as assets of war, militarized, covered in sandbags, protected with concrete vaults, or armored in metal! Like trenches, like ramparts and forts, they stand securely, like impenetrable fortresses of our Italian civilization, which is moving once more to conquer the world.

There is ample reason to be skeptical of this hyperbolic rhetoric, with its glorification of war. To begin with, the author, Marino Lazzari, was a propaganda official of the Fascist state. His talk of "militarization" of artworks for the sake of an "impenetrable" "Italian civilization" can be read as as evidence a specifically Fascist tendency to "aestheticize politics," as Walter Benjamin once put it. Furthermore, Lazzari likened the protective structures to fortified military architecture, but many did not look like hard shells at all; they seemed rather like piles, tents, or screens. However, something rings true in Lazzari's insistence that these protective structures were meant to be appreciated aesthetically, that they were meant to be "moving". These sandbag structures had a distinct architecture; they

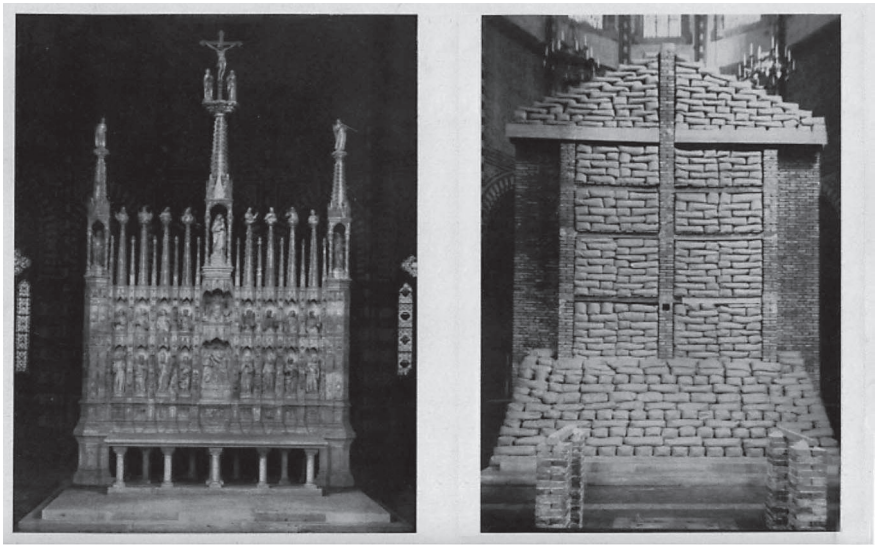


Figure 2. Altarpiece in the Cathedral in Bologna, before and after its protection by sandbags.
***La protezione del patrimonio artistico nazionale dalle offese della guerra aerea* (Florence: 1942)**

were designed to be looked at, and to convey the fact that something beautiful lies inside them.

Nor was Fascist Italy the only nation to implement and publicize a systematic program of monuments-encasement during World War II. Similar protective operations were undertaken, with similar-looking results, in France, Germany, Belgium, the Netherlands, and their colonies; in Austria, as well as the Middle East. In fact, this protective architecture did not spring up unexpectedly in the 1940s. The idea of sandbagging monuments had been germinating since the late 19th Century, had been tested in World War I, and perfected during the Spanish Civil War. Monuments' protection had also preoccupied the international political class with increasing urgency throughout the 1920s and 1930s, becoming the object of several attempts to draft an international law. By the time World War II broke out and the Italian government published its book, a veritable protective *habitus* had emerged.

This international habit is still alive today. Over the last decade, as Syria has devolved into a brutal civil war, images of sandbagged museums and monuments have been regularly circulated in the international press and on

social media. To give you only three examples: the Archaeological Museum in Aleppo; the mosaics at the Al Ma-arra museum in Northern Syria; and the Halawiyeh wooden niche near Aleppo, each has been protected and photographed by a competing group, who has posted images of its work to social media. More recently still, reports of monuments protection have emerged from Ukraine. Early on in the conflict, we saw pictures of public statues haphazardly wrapped in blankets. Later, these images were replaced with staged photographs of elaborately sandbagged structures. One Ukrainian architectural firm, Balbek Bureau, has even designed a modular kit of parts which can be used to protect a statue and then hang a drawing of the protected object on the outside of the scaffold.

Just as with the Italian book I began with, we are supposed to be "moved" by the sight of these protective acts. But how does this moving work? How is this appeal to sentiment supported by architectural design and engineering? These are the questions that have guided my research into this protective architecture as it has developed in the last century – this "protective matrix", as I call it. It is a matrix in both the literal sense, that it consists of a grid of repeated structural elements, and also in the broader sense that it is a human network that spans far beyond the physical space of a single object. Protection has here two dimensions: it lies in physical work that is accompanied by appeals to an international public. Yet far from being pure propaganda, these protective structures constitute deliberate aesthetic acts, and I would like to demonstrate that we should take them seriously as integral to a complex shift, in international legal discourse, towards "the humanization of war."

Before I go into this history, let me stay with this 1942 Italian album just a while longer, because its exaggerated visual rhetoric offers a helpful entry point into how sandbag protection works to provoke an aesthetic reaction. In order to be "moving," as Lazzari put it, these sandbag structures had to be recognizable as works of art. This work of recognition was facilitated by the book's layout, which shows not single images but pairs of photographs of the same monument, before and after its protection. To situate these photographic pairs in context, it is useful to compare them to three other genres of publication which made use of comparative pairs of photographs of architecture during this period: the art history textbook, the camouflage handbook, and the propaganda pamphlet.

First, the art history textbook. By publishing side-by-side photographs of works of art, the Italian volume borrowed a visual rhetoric pioneered by the Swiss art historian Heinrich Wöllflin in his lectures and in his 1915 book, *Principles of Art History*. Wöllflin used pairs of images of buildings to invite formalist comparison, highlighting the differences between two architectural styles, especially between Renaissance and Baroque. Similarly, the reader of the 1942 Italian album was invited to perform a stylistic reading of Italy's protective works. Consider two photographs of the altarpiece at the church of Santa Croce in Lecce. Originally built in 1695, it had been covered in wooden scaffolding and then covered in sandbags. Looking back and forth between these two images, we contemplate not protection *qua* protection, but rather the difference between two styles: one fragile and ornate, the other fortified and monolithic. Looking at more of the pairs as they were published in the Italian book, some consistent patterns emerge. Richly sculpted surfaces become plain walls; figural ensembles turn into prismatic objects; trabeated buildings transform into muted pyramids. Adopting Wöllflin's method, we could even name the "stylistic principles" of this protective architecture: while the original monuments are examples of Ancient, Renaissance, or neo-classical architecture, the encasements in contrast seem to embody the principles of architectural modernism, such as the removal of ornament and the preference for simple

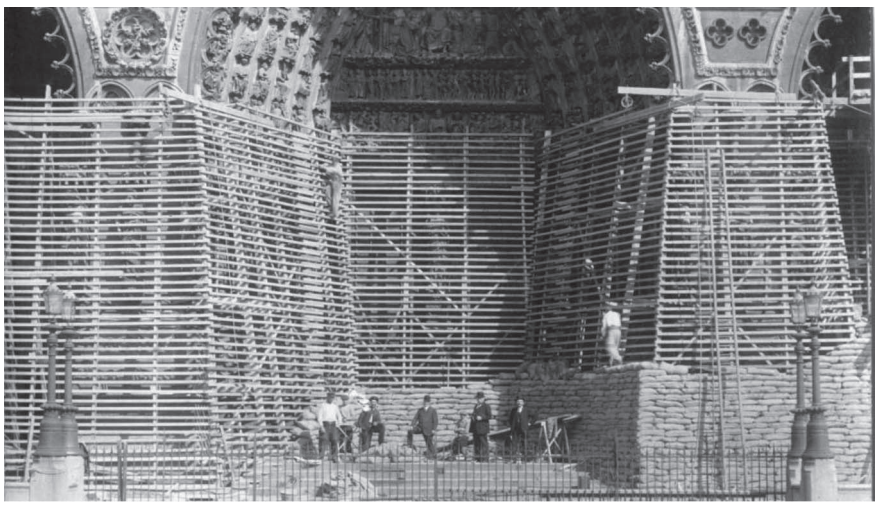


Figure 3. Albert Léon, "Portail de la Cathédrale de Paris," 1915. From Albert Kahn, Archives of the Planet.

volumes. The very fact that we can play this art-historical game indicates that the buildings and their protections have been photographed from a specific distance. In art history, this distancing makes visual comparison possible; in war, this same distance takes part in a kind of mental protection: we are *pushed* back from the monument, through the very act of looking.

The second genre of before-and after photography that was in heavy circulation during this period can be found in camouflage handbooks, where pairs of photographs were supposed to train the eyes of pilots to detect industrial targets that had been hidden by camouflage. The science of camouflage was devoted to predicting what a photographic lens would capture. To demonstrate how this worked, pairs of images showed a target before and after camouflage, showing that military installations could apparently disappear in plain sight by being painted or covered with patterns inspired by anodyne city fabric or the countryside. There is of course a difference between camouflaging a target and encasing a monument with sandbags: while the camouflaged target was meant to disappear into its context, a protected monument on the contrary emerged as hyper-visible. Still, the comparison between encasing monuments and camouflaging targets reinforces that an act of perception was integral to the act of protection: *viewing* the protected object was essential to *protecting* it.

The third kind print publication that made extensive use of photographic pairs in this period was the propaganda pamphlet, especially ones devoted to accusing the enemy of iconoclasm. As early as 1940, cultural ministries and military agencies of various European governments began producing such publications to sensationalize destruction by the enemy, often through before-and-after photography. A 1944 German propaganda booklet titled *Der Kampf des Deustchen Kunstchutzes*, for example, showed prewar buildings on the left page, and the ruins of the same building on the right. Also in 1944, the *Istituto Luce* published a booklet that accused the Allies of barbarism by showcasing the buildings their bombs had destroyed. This time the left-hand page showed a prewar photograph of a historic building; on the right page showed the same image, with a graphic "X" superimposed. The same before-after visual grammar continued to be used when the war ended. In 1945 the American Allied Military government supported an exhibition titled *War's Toll of Italian Art*, whose catalog depicted photographs of buildings before and after their damage. Pairs of

photographs in these kinds of books encouraged the viewer to perform a visual re-enactment – moving the viewer to hate the enemy, or, in the case of the American book, to empathize with Italians whose buildings had been damaged by American bombs.

Placing the Italian album of protected monuments alongside this final genre where destruction is depicted has an altogether other effect: in retrospect, this shows that many of protective measures taken to shield monuments were woefully inadequate to meet the increasing severity of the bombing. Indeed, the Italian album can be situated at a very specific short-lived moment in the timeline of war: in late 1942, just before an intensification of bombing by British air forces radically expanded the scale of destruction on the European continent. Already, as the book was going to press, the Italian Minister of Fine Arts Carlo Bottai acknowledged that given "recent experiences" some destruction would be "inevitable," and the protections would have to be "further consolidated" and "expanded." A sense of this scale can be seen by considering how an ancient monument, the Arch of

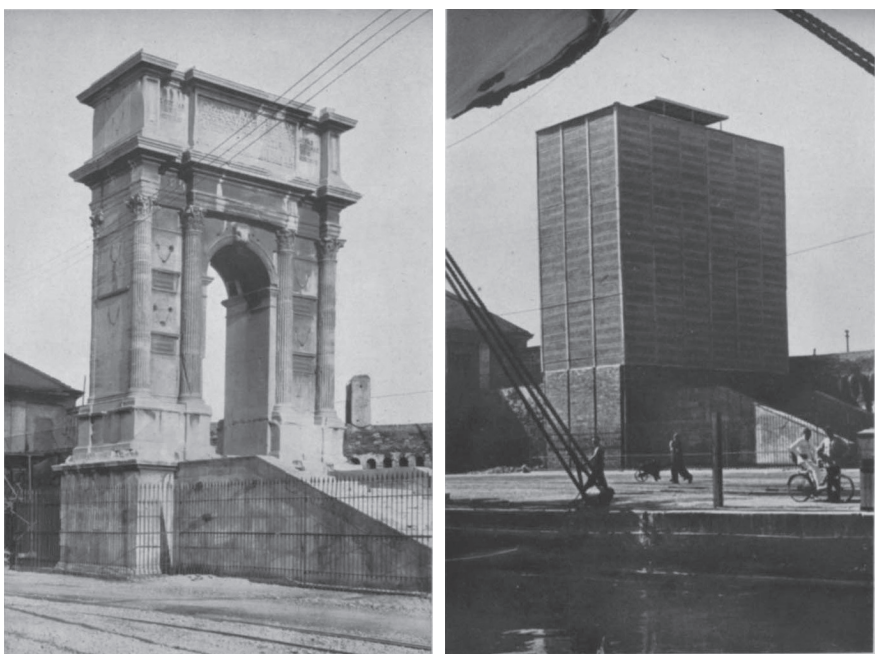


Figure 4. Arch of Ancona, before and After its protective works, 1942. La protezione del patrimonio artistico nazionale dalle offese della guerra aerea (Florence: 1942)

Constantine in Ancona, traversed this period. In the 1942 album, the Arch was protected by a wooden structure and cement board and thus appears transformed into a kind of modern building.

The monumentality of this crisp and thin volume had also been exaggerated by the photographic framing of the image, from below. Consider in contrast how the Arch appears, three years later, in an aerial reconnaissance photograph of the port of Ancona after its bombing. Here, the monument is entirely dwarfed by the scene of destruction all around: the port, the industrial architecture, and a capsized ship in the harbor. Even though the Arch seems to be intact, the protective shell has been damaged and its thinness revealed. In light of this crescendo of destruction, the monuments-encasement program begins to seem like a theatrical exercise: as if the monuments of Europe had gotten dressed up for war, with totally inadequate armor.

Yet we should be careful not to read the physical thinness of this protective apparatus as a sign of its conceptual weakness or superficiality. Indeed this protective apparatus evolved in concert with ongoing debates and experiments about the legality, morality and spatial reality of warfare. These debates can be periodized, roughly, in three phases. First, the origins of this protective apparatus can be traced to new practices of protection and the proliferation of urban warfare during and after World War I. Secondly, during the interwar monuments played a surprisingly important role in efforts to codify the rules of warfare by the international community, especially during the rise of a legal movement for the "humanization of war." During this phase, the Spanish Civil War served as a particularly important case-study and cautionary tale. Finally, in a third phase, World War II is the moment when protective designs proliferated, and the legal, discursive, and architectural techniques that had accumulated in the last half century culminated to produce a protective consensus. It is to these three phases that I now turn.

World War I: Birth of sandbag architecture

The idea of protecting art and architecture from enemies during war far predates the 20th Century. Many historians have detailed how art and architectural objects have been integral to war and diplomacy since before

antiquity, whether as lost loot or as protected treasure. Yet World War I was arguably the first modern conflict where enemy nations *competed to protect each-other's* art and architecture. Many of the protective techniques I have been showing you in the Second World War were pioneered in the First. Foremost among these were: the removal of museum objects to locations away from the city; the building of scaffolds and sandbag walls around anything that was "too heavy to move," and the use of photography to document these processes.

For example, during World War I, a wooden lattice was built over the front of Notre Dame Cathedral in Paris, then covered in carefully disposed grid of sandbags. A photographer captured the process, with the men hired to do the work posing in front.

This photograph helps analyze point to three main factors in the proliferation of this kind of protective act during the conflict. First, there were conservators on the ground who were available to direct this work. As historians of preservation have shown, the late 19th and early 20th Century saw a remarkable growth of conservation bureaucracies and a consolidation of state control over monuments in Europe. This means that in Europe and its colonies, anywhere there was a state-sanctioned monument, there was also

Fig. 1. Fire Cover of Older Type—First Stage.

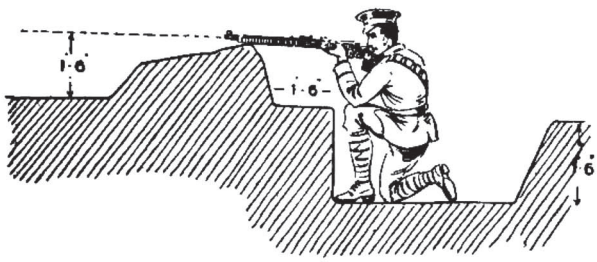


Fig. 2. Fire Cover of Older Type—Second Stage.

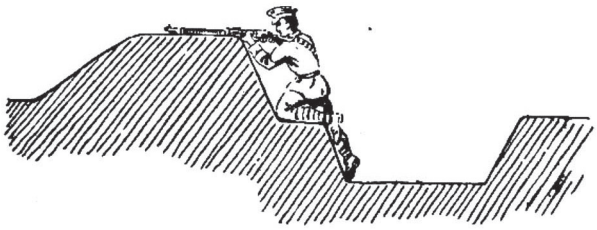


Fig. 3. Older Type of Fire Trench Completed.

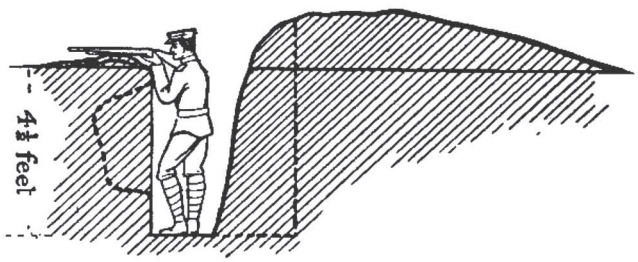


Fig. 4. Section of Modern Fire Trench.

a team of conservators, like the one we see in this picture, to perform this protective work (at least until being called up to serve). Secondly, World War I set in motion intersecting waves of mobility of the elements of this protective system, with not only soldiers but also sandbags and cameras travelling across great distances.

The jute sandbag became an especially important piece of military equipment after 1914. Originally a colonial product, in the 1820s it became the preferred vessel for international trade, as commodities stopped travelling by barrel and began being shipped in bags, whose size was calibrated to the carrying capacity of a single laborer. The idea of filling these bags with dirt to protect against firearms was first tested in the Crimean war, and by the time World War I erupted, bag production was widespread enough that it could be ramped up systematically by governments, who ordered and distributed them to their armies. As the sandbag became associated with trench warfare, it made its appearance in military manuals and handbooks.

One 1915 manual showed a set of diagrams for the "evolution" of the trench: from an above-ground protection for reclining body, to a dug-out for standing, with the sandbag transforming from a movable object into

a fixed element of a retaining wall. Each time sandbags appeared around monument in an urban environment, it was a bit of trench warfare being brought to the home front and into civilian life.

The third component of this protective system, (returning now to this photograph of Notre Dame) was the photographic equipment itself. There was an increasing number of cameras travelling around the globe, and we find images of protected monuments in a number of photographic archives. Sandbagged cathedrals appear occasionally in Albert Kahn's *Archives de la Planète,* for example, a famous collection of early color photographs containing over 72,000 images taken in 50 countries between 1908 and 1930. In this image of the cathedral of Soissons, for example, a shapeless pile around the altar was topped by a ribbon of French flags. Most of the time these bags were used to protect monuments only in combination with other building systems. As you can see in these images, statues in Paris's urban parks such as the Jardin de l'Observatoire, and in the Jardin des Plantes were encased in a post-and-beam wooden frame, topped by sandbags, then covered with a pointed shed roof. These structures did not cohere as a single "architecture." They were more like scaffolding, and were often used as supports for unrelated slogans, graffiti, or advertising.

There is a photographic album in the archives of the British Museum which documents the work that the staff performed in 1915 to 1916 to prepare for war, and which can serve here as a case-study in the transformation from the occasional use of sandbags to a systematic one. As soon as war broke out, the British Museum rushed to move its collections into storage. But for anything that was too heavy to move, the staff built piles of sandbags in its galleries, leaving everything else in its place, including empty glass cases. The one exception to this either/or system comes for the Elgin Marbles, the extremely famous marble blocks that had been taken a British aristocrat, Lord Elgin, from the frieze of Athenian Parthenon and brought to London in the 1820s. Since 1832, these blocks had been installed in a room of the museum designed expressly for their display, which incorporated them, at eye level, into the museum wall. The protective strategy deployed in 1915-1916 was to wall the marbles in even further, using a combination of soft cloth, wood scaffolding, masonry, sandbags, steelwool, and a layer of plaster. Elaborate section drawings were made, which showed how the ancient marble's ornamental profiles would become flat planes, and sculpted blocks would disappear inside a blank museum wall.

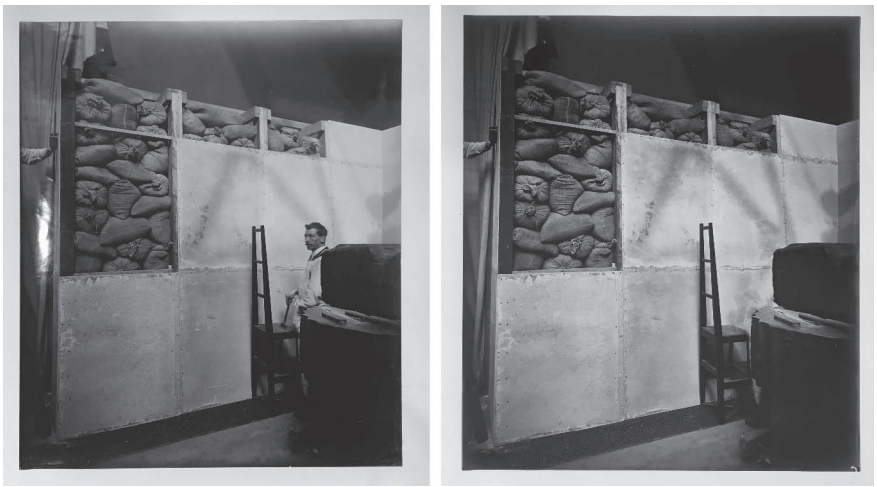


Figure 7. Album of photographs for the protection of the Elgin Marbles Room at the British Museum, 1914-1916. Left: Original print; Right: retouched print.

The photographic album documents this disappearance step by step. In fact, the album contains two prints of each photograph: one on glossy paper and one on matte.

The photographs in each pair are identical, except one: a view of the wall after a piece of the frieze has entirely disappeared. The glossy print shows a protector at work, next to a stool. The matte version has been retouched, so that this human has disappeared, leaving only a wooden chair, and the faint trace of a silhouette. The first photograph is already a document of a disappearance, but in the second print someone could not resist retouching the human away, as if the protective mandate had been passed across media. To protect, in other words, was not only to render invisible, but to *produce an image of disappearance*.

It's useful to remind ourselves of the way Walter Benjamin theorized retouching in his 1931 *Little History of Photography*, arguing that early photographers used paint to give photographic subjects an "auratic glow." Historically, Benjamin argued, blurring the edges of objects in photographs had arisen as a way to compensate for the fact that new cameras at the end of the 19th Century were beginning to capture too much contextual detail. Retouching was a way to distance the photographic subject from the viewer, to ensure that a photographed person remained an enchanted distance away from the viewer. Benjamin's focus was on portraiture, but his in-

sights are also helpful to understand retouching as a common procedure in early photographs of works of art and archaeological sites. Photographers for the London Museum would have been accustomed to using retouching to make some details, including persons, disappear and highlight others. For example, here we have a pair of contemporaneous photographs of the archaeological dig at the site of Dura Europos: one black and white, the other colorized. The original black and white print shows two persons in the foreground performing archaeological work, whereas in the colorized view, the local laborer in the foreground has been retouched away, as if he disturbed the aura of the murals behind him. The British archaeologist has been allowed to stay, his presence now enhanced by coloration. Returning now to the photograph of the Elgin marbles in the British Museum's album during World War I, retouching performs a similar function there: of enhancing the object's aura, with the added complication that the object in the photograph, the Elgin marble, *also disappears physically* since it is hidden behind the protective architecture. One way to interpret the decision of the retoucher to leave the chair visible, then, is that this was a way to make an empty spot into which the viewer was invited to see himself. The visual power of the work had been extended across media, and indeed across the blank wall.

This British Museum album is the first I have found to systematically document one museum's protection, from start to finish. But it was a private record. The first public and official surveys of protective works during the first World War were published by the Italian and German governments in 1918 and 1919 respectively, and they make for instructive comparison.

In 1919 Paul Clemen, the leader of the *Kunstschutz* (the Art Protection Unit of the German Army), edited a two-volume book detailing the activities of the unit. Throughout the war Clemen had commanded a vast team of officers, who in civilian life were monuments administrators or art historians, on a mission to inventory and protect art and architecture in the battlefields of Europe. Clemen also ensured that the Unit recorded its protective works, as well as record evidence of the enemy's own. At war's end, Clemen collected this documentation, as well information as from as many other sources as possible, and published it in two volumes. As he wrote in the introduction, the goal of publishing this record was to interrupt the cycle of accusations and retribution that trailed armies on all sides of the war. But if this goal sounds practical, his motivation were idealistic.

"Artistic culture and war," Clemen wrote in the book's introduction, were "opposed" like "two poles which repel each-other." For that reason, he showcased not only Germany's work but also included Belgium, France, Austria, Italy, and the Near East. In contrast to the Italian and British albums I have shown you so far, Clemen's book was mostly devoid of visual rhetoric. The photographs were small and occasional. Several chapters described protections that involved no physical barriers at all, especially for colonial sites and for monuments in Iraq, Afghanistan, and Greater Syria.

While Clemen included evidence of the work that had been done in Italy, he was somewhat torn about the Italian tendency, already pronounced in this conflict, to aestheticize its own protective works. Indeed the Italian Ministry also published its own set of photo-essays in 1918 which took an explicitly sentimentalized view. One article focused on Venice showed a tightly-gridded lattice of sandbags had been woven around and between all of the altarpieces the interior of San Marco in Venice, with every bag

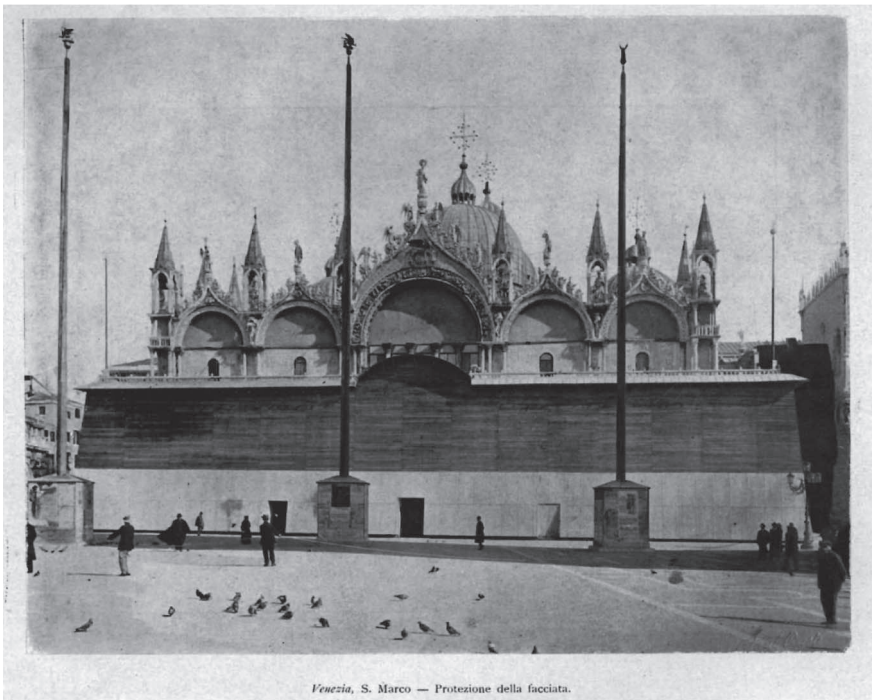


Figure 8. Façade of San Marco, Venice, protected in 1915, from *Bollettino d'Arte: Protezione degli oggetti d'arte* (1918)

laid just so. In the accompanying drawings, the Italian conservators had shown precisely how the statue would remain intact inside. On the piazza San Marco, entire facades had been screened off and photographed from several angles. In effect, the world-famous monuments had been temporarily demoted to being ornamental backgrounds for a blank wall. Elsewhere, the two architectures mixed deliberately into one: the massive reinforcing piers built as structural reinforcement for the ogival arches of the Palazzo Ducale, for example, looked as though a Renaissance architecture was now resting on a new medieval base.

When Clemen featured Italian protections in the *Kunstschutz* report, he refrained from including these artistic photographs; calling the Italian system "cleverly thought-out, almost downright refined," and hinting that he objected to this refinement. (The English translation was more explicit, adding that they were "cleverly thought-out, almost too clever.") I will return to Clemen's dilemma at the end of my lecture; for now I want to note that despite his misgivings, Clemen's work amounted to the first attempt to record an international norm in the making. It is for this reason that his book made its way into the libraries of European museums, as well to the United States.

During the years following the end of World War I, monuments and archaeological sites were embroiled with increasing frequency in incidences of urban and territorial warfare. Certainly the colonial conflicts of the 1920s implicated monuments and archaeological sites. While no explicit "Protection Unit" was assigned to protect them, the fact that these wars were accompanied by a steady rise in the use of photography for diplomatic intervention is significant. Here, I am showing you a photograph of the city of Baalbek, taken in 1925 by the Italian Giuseppe Stironi. Stironi travelled to Greater Syria to photograph the ruins of classical antiquity. But as he found himself in the city of Damascus in 1925, witnessing the French and British bombing of the city and the resulting uprising now called the Great Syrian Revolution, he turned his camera to this destruction instead. Travelling across the colonial city, Stironi captured its ongoing ruination: demolished palaces; street fighters behind sandbags; French troops behind barricades, important sites like pharmacies protected by guards and barbed wire, and a number of human casualties. Stironi is remembered mostly because he transmitted these photographs to an American diplomat who brought them to the attention of the international community in Geneva,

provoking a political crisis for the British Empire, and effectively accelerating the transformation of Syria into a mandate.

By the end of the 1920s, then, it was possible to witness monuments protection and destruction, and to use that visual documentation in making a legal appeal to the international community. But it was during the Spanish Civil war that a more formal protective system coalesced, as an object of architectural design.

The Spanish Civil War

The war in Spain broke out in July 1936 and quickly escalated into an international aerial war, forcing civilians to mobilize, including for monuments protection. By 1937, a group of artists, photographers, and architects had formed a group that called itself *Junta del Tesoro Artistico* (National Council for Artistic Treasures), which organized the encasement of much of Spain's outdoor statuary, the padding of many of its architectural facades, and the removal of all public collections to remote shelters. This work constitutes a turning point in the story for several reasons.

First, as you can see from these images, the structures that the *Junta* built to encase art and architecture were made not of sandbags but of brick walls and piles of sand. This choice was due, in part, to material scarcity: there was little wood to be found, and all sandbags were needed for the heavy street-fighting. This brick architecture was also the result of learning from the early days of destruction. Early on the architects of the *Junta* noted the tendency of protective structures to fall and damage the works they were supposed to protect.

They also realized that most of the damage to delicate surfaces of art and architecture came not from the "direct hit" of a bomb, but from fire that tended to follow the bomb's impact, or from the "concussed air" that propagated in shockwaves following impact some distance away. The Spanish system, then, removed the use of flammable wood, and *buried artworks directly in sand* before encasing them in masonry. The sand provided an absorptive layer between the monumental object and its armor.

Some of the architects involved in the *Junta* had been employed by the public works department which was responsible for preserving medieval

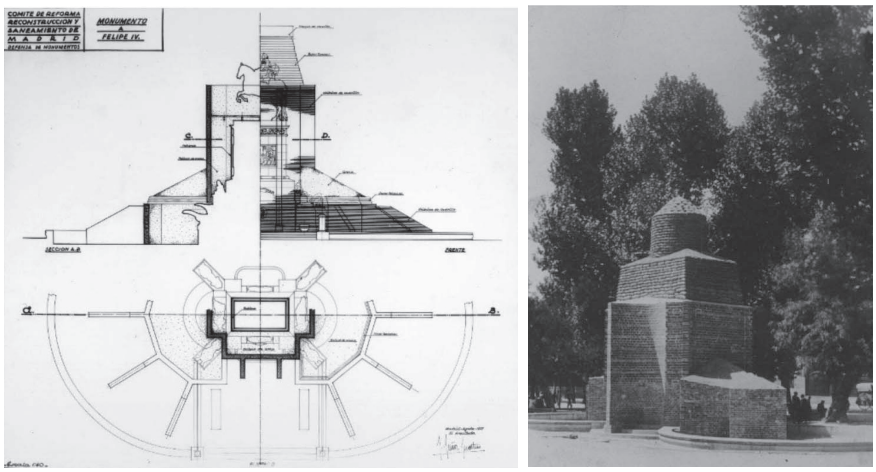


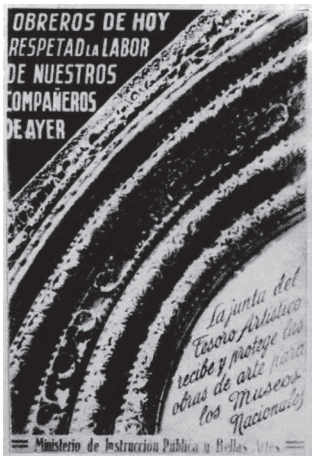
Figure 9. Felipe de Azpiroz, drawings and photographs of the protection of the Monument to Felipe V in Madrid, ca. 1937. Comité de Reforma, Reconstrucción y Saneamiento de Madrid. Defensa de Monumentos. *Proyecto de protección del monumento* a Felipe IV. Plaza de Oriente, Madrid, 1937

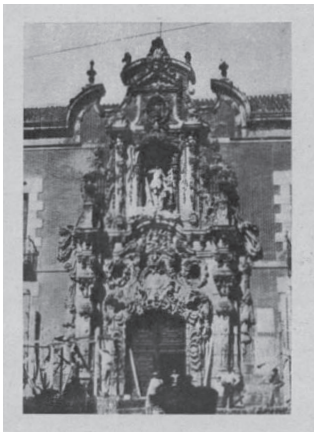
fortifications, and they invented a distinctly new formal vocabulary for this protective architecture. Once-delicate object such as the fountain of Cibeles and the statue of Felipe IV became fortifications, with fins that extended radially outward. The structures designed by one architect especially, Jose de Azpiroz, look like medieval ramparts. Azpiroz made arcs and vaults, and articulated the corners with sharp, pointed edges. In the drawings of these fortifications, he highlighted the contrast between protected and unprotected building by splitting the image into two: on the left, one half of the monument is exposed; on the right, the other half looks encased. Here the Wöllflinian stylistic comparison became part of the design, and one could imagine that Baroque statues had physically transformed themselves into medieval structures. This association of protection with a neo-medieval architectural style was reinforced by the fact that movable artworks were evacuated into actual medieval buildings, most notably the Serranos towers. Originally built in the 14th Century as the monumental entrance gate for the city of Valencia, they became a repository for works of art from the Prado Museum. In fact, the building's architecture had to be modernized for the occasion, as a reinforced concrete floor was added to

support the weight of these artworks. Fortification and protection were no longer two architectures, but became a single system.

There is some debate in the literature on the *Junta* about how to interpret this medievalism. On the one hand, these architects seemed to make a historicist gesture by adopting the image of the Middle Ages to convey a sense of impenetrable fortification. On the other hand, many of the artists and architects who were in the *Junta* had been a part of an artistic avant-garde who embraced modernism – and there is a certain modernism to these forms as well. Their interests in abstraction lead us to want to consider these fortifications as formal experiments. Yet this dilemma of interpretation can be bypassed entirely by paying closer attention to the specificity of the engineering of protection. First, many of the forms of the protective structures were the product of a very specific structural problem: namely, how to design a free-standing brick shelter without internal supports, and without a vault overhead. After all, the protective brick structures could not use the same structural devices as the architecture of the middle-ages, since their interior was taken up entirely by a protected object and they could not use any actual supports. The protections were fact empty boxes made from a very modern principle: fragments of medieval façades standing on a perimeter, and attached by vertical fins, or shapes arcuated in plan.

Secondly, if we are to speak of a kind of modernism in this protective architecture, it does not reside in these "constructivist" forms alone. Rather, the *Junta* promoted its aesthetic agenda in its written and published material, which reveals a modernist attitude to the very perception of art and architecture. This attitude resulted in part from a need to deal with religious art. The Republicans had organized this protection of monuments comparatively late, months after the war had broken out, and in reaction to accusations that the government wasn't acting fast enough to save religious art after some early episodes of iconoclasm. The implication was that Leftist leaders *wanted* religious icons to be destroyed. Once the Junta did form, and began to recruit artists, art teachers and students into its ranks, they not only organized the physical protections I have been showing, but they also used the other arts – graphic design, painting and photography – to educate the population about the need for protection. These posters were to be posted across the cities of Spain and, as you can see, their message literally told people "what to see," in particular, by downplaying the religious meaning of the protected art.





The poster I am showing you on the right shows a statue of a Christ on the cross, with the slogan "*Don't see in this a religious image / It is nothing more than a work of art / Help preserve it*." On the left-hand poster, you can see the Junta's anti-religious attitude applied to architecture, in a poster that includes an image of a church façade and a message that this should be protected not as a house of God, but out of solidarity with "companions from the past" – which is to say, the medieval masons who built it. These posters were meant to tell viewers "what to see," and to recruit them into the protective act.

The Spanish civil war constitutes a turning point in the story of what I have called the protective matrix for several reasons. First, it showed that artists and architects could apply modern design principles for protection. Second, several of the technical discoveries they made as they experimented with protective architecture would become essential to applying protection in later con-

flicts, and preparing for international law. Finally, they accompanied their protective ethos with a new attitude to monuments, which required them to make a secular appeal to the public's affective attachment to their nations' art and architecture.

This public, it turns out, was not only made of Spaniards but also of the nascent international community. There were many international witnesses on the ground of the Spanish Civil War. The war attracted a cohort of journalists who reported on the conflict almost in real-time, sending daily dispatches that frequently included reporting about protective works. One journalist for the *New York Observer*, for example, sent a report that read: "I saw the Cibeles Fountain, being buried, while I was there." Furthermore, the artists and architects of the Junta themselves participated in this publicity, with cameras, typewriters, and petitions sent to whomever would listen. One place where they knew to send their dispatches was Geneva, where a class of international diplomats was debating the new laws of war.

"From Perimeter to Perimeter"

Among those who were watching the Spanish events from Geneva was a new kind of cultural diplomat, which the League of Nations was trying to empower. Since the late 1920s the League had a number of committees devoted to the 'arts and letters' in Paris and Geneva, as part of a cultural branch called "The Committee for Intellectual Cooperation," or CIC. Subcommittees of the CIC included one for museums, one for monuments, and several for literature. The Spanish Civil War quickly ignited debate among them about the extent to which they were supposed to be involved in protecting art at war. An overview of the issues at stake is important because they became an early test of the ability of international organizations to intervene in the cultural aspect of war.

The debates about whether the League of Nations should be involved in international monuments' protection in advance of a possible war began in 1930, and featured basically two factions. One group, which we could call the idealists, thought that even to imagine a possible future war was contrary to the peaceful mission of the League, and that the resources of the CIC were better used in promoting art and architecture as peaceful alternatives to conflict. The other camp – which we might call the realist camp

– thought war was so inevitable that it would be best to prepare for monuments being damaged and mitigate this eventuality. These two groups correspond, broadly, to two competing movements for international law that were active in Geneva and the Hague. One movement, which advocated "moral disarmament," thought that it was useless to legislate war, indeed that the League's role was to educate a public to avoid future conflicts. The second group advocated what was then called "the humanization of war," assuming future conflicts and seeking to establish limitations on weaponry, casualties, and sites of targets.

Recounting all the debates that unfolded over the course of the 1930s among the League's Committees would be too lengthy to do here. I have excerpted the critical statements from each of the meetings. While the idealist group, those in favor of moral disarmament, originally dominated, in 1937, the CIC changed course: from arguing that Arts and Letters had nothing to do with war, to getting involved in monuments salvage, specifically because of the events in Spain. Indeed, one of the main proponents of moral disarmament on this committee was the Spanish pacifist writer Salvador de Madariaga. Vehemently opposed to any attempt to associate art and war, he changed his mind in 1937, and the Committee followed suit.

In 1937, the Arts and Letters Committee of the CIC adopted a resolution offering to protect Spain's monuments in three ways. First, they offered Geneva as a refuge for endangered art. A selection of famous paintings from the Prado, including Velasquez's *La Meninas*, were brought to the League's headquarters with great fanfare. Second, they offered to devote a special issue of their journal, *Mouseion*, to the Junta's work. The photographs of the Cibeles Fountain protected in bricks were published again, this time accompanied by an actual photo of the process of "burying it in sand." Third, they began work on publishing an international manual which would contain both a proposed draft of an international law prohibiting damage to monuments in warfare, as well as a compendium of technical instructions for protecting art and architecture in war.

Once the CIC decided to propose a draft of an international law, they recruited an international lawyer, Paul Visscher, who was familiar with an entire a series of legal strategies and concepts that had been debated among international lawyers since the turn of the Century. I want to briefly recount this history of attempts to legislate war to protect civilian lives, because it is a history in which monuments play a surprisingly important role.

The first two instruments of modern international law of war, the Hague Conventions of 1897 and 1907, had protected civilians by prohibiting bombing "undefended towns", and included a clause that dealt with the protection of monuments. But as soon as World War I had broken out, the fundamental distinction it relied upon – between "defended" and "undefended" places – began to seem obsolete in light of the proliferation of urban warfare and aerial bombing. After all, any object on a map could potentially become a target, blurring the line between between civilian life and military space. At the end of the war, these distinctions were therefore revised.

In 1918, the Netherlands Archaeological Institute proposed a new draft of the rules of war, adopting a different approach to the space of war. Rather than a place-based approach, the Institute articulated an *object-based* conception of monument protection: monuments should be immune from bombing, the Institute said, even if there was fighting around them. The fundamental innovation of the NAI draft was the idea of protecting monuments by extending a zone of immunity around them. But the promise of protecting whole towns was not entirely evacuated. The NAI proposal then cleverly imagined that, in the case of cities with historic centers, the "concentration" of such monuments would "neutralize" and effectively "demilitarize" entire urban zones.

Over the next two decades, various other groups incorporated this idea, that a monument is surrounded by a zone of immunity, into their efforts to legislate war. In 1923, when a new "Draft of the Laws of Air War" was drawn up in Paris, it devoted an entire section to monuments, quantifying the size of this "zone" by proposing that a circle with a diameter of 500 meters around any monument should be exempted from fighting. In 1934, a conference was convened in Monaco to revise the drafts of both monuments and humanitarian law. This time, the proposed law began by applying this rule to the perimeter around multiple adjacent monuments. So again, in any historic city, you could extend a protective perimeter around a monument, and then proceed onto the next monument, and imagine that, in the words of the draft law, "from perimeter to perimeter" it was the entire city that was ultimately protected. To give you a sense of scale, I have brought maps of the five so-called "cities of art" that were mentioned in this draft, and mapped the 500-meter perimeter around every monument.

As you can see, the entire center ends up being protected by this accumulated "perimeter."

What is astonishing about the way the Monaco drafts intervened in the monuments's protection is not only that its authors sought to legislate the spatialization of the power of a single monument, extending immunity to an entire city of art. Even more surprisingly, the 1934 Monaco conference proposed to apply this principle of creating zones of immunity, inspired by monuments, to the protection of civilians. "If this is so in the case of respecting works of art," the draft said, "how could one hesitate to proceed in the same manner when it comes to the protection of human life?"

By analogy with monuments, the law then proposed to establish "sanitary towns" by offsetting "within a certain radius, … the immunity that is granted... to hospitals, ambulances" and other medical facilities. In other words, in international legal discourse, the power of inert monuments to create exceptions to war had now been extended to live humans. It was only after having been scaled to the size of monuments that the "humanization of war" became associated with specific dimensions.

In summary: Monuments protection appeared as a reference in every draft of the laws of war that was elaborated by the international legal community in the 1920s and 1930s, because those who conceptualized these laws imagined that monuments could radiate a certain spatial power of exception. The laws of war were humanized only after they had been monumentalized. And by the same token, a monument had been re-defined as an object that has the power to create holes of immunity in the otherwise continuous spatial coverage of war.

To return to the manual that the League of Nations' Committee for Intellectual Cooperation published in 1938, then: we can find that its legal language fits directly into this lineage. The legal half of the manual proposed two principles to protect monuments in future wars: first, that belligerents should agree to refrain from fighting in a zone of 100 meters around any monument, second, that a certain flag or emblem would be used to mark out monuments and their surrounding zone. And yet, the manual also argued that monument protection would be "an international obligation but exercised nationally." Indeed, by 1939, no agreement had been reached by the League of Nations or by bilateral agreement to ratify any of these proposed laws. In fact, already by 1938 various governments had published

pledges that they would, in an eventual war, mind monuments and works of art, *but only on their own territory*. Nationalism had been explicitly attached to the protection of monuments.

To counter this nationalism, the second half of the manual, offered techniques and specifications for how a protective perimeter could be implemented around monuments through physical architectural means, instead of by legal fiat. This technical half of the 1938 manual collected information about the sandbagging system that had been worked out over the course of two decades. Sandbags would do the work of humanization that law and diplomacy had failed to perform. And instead of an international legal consensus, it was a market in construction materials that played the part of a bridge between nations. In the intervening period, not only the sandbag but all of the other components of the system, including scaffolding, had been standardized and subjected to new designs and patents, becoming more commercially available.

The League of Nations' manual was not the only publication to disseminate these instructions and norms about a sandbag architecture. Drawings of patches of sandbags that could be erected by anyone seeking to make a shelter appeared in a number of architectural publications in the late 1930s, such as a 1937 special issue of the British periodical *Architect's Journal* devoted to "passive defense," and a set of pamphlets issued by the French Air Forces in 1938. In these publications, stacks of sandbags were usually shown alongside a specific architectural detail – a door, a window – to be protected. These specifications to protect buildings against bombs had been refined by civil engineers throughout the 1930s. The idea was to reverse-engineer protection, based on the ongoing engineering of destruction. By paying attention to weapon's diameters, bomb poundage, and targeting depths, one could predict the number of sandbags, and the amount of scaffolding, that would be needed to give the bomb something to destroy. In fact, in most of the literature on 'passive defense' a human figure was drawn to accompany the sandbag. In this drawing, which appeared in the French magazine *Architecture d'Aujourd'hui*, the human scale figure even accompanies the bombing damage along its trajectory. Remember that already during the Spanish Civil War architects realized that the main destruction that could be prevented was not from a direct hit but from the fire that would spread as a result of explosives, or from the "concussed air"

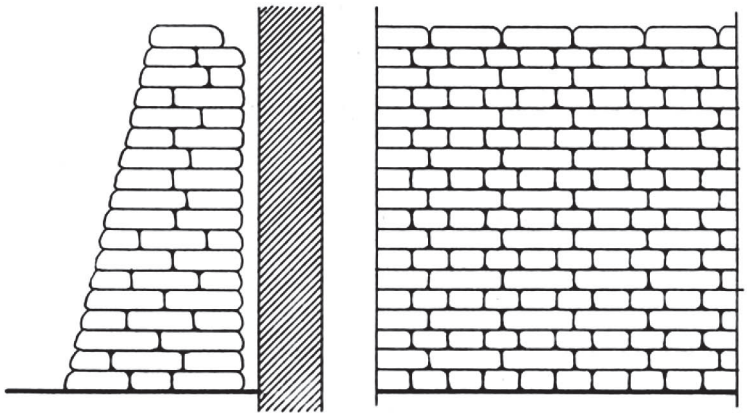


FIG. 11. SCHÉMA INDIQUANT, DE PROFIL ET DE FACE, LA DISPOSITION DES SACS DE SABLE POUR LA PROTECTION DE LA BASE D'UN MUR.

Figure 12. "Schema indicating the disposition of sandbags fort the protection of the base of a wall," from Office International des Musées, *La protection des monuments et œuvres d'art en temps de guerre* (Geneva: 1939).

that would propagate from a nearby bomb. Now there was a human scale figure travelling along the trajectory of this concussed air.

The association of the body with the sandbag became important in another sense: in the late 1930s, as European monuments administrations begun to equip their monuments conservators for war, they also found themselves planning for how many laborers would be needed to produce the encasement of any given monument. In 1935, for example, the French government sent a questionnaire to every monuments' official, asking him to give an estimate of the linear feet of sandbags that would be needed to protect the buildings in his care, and a certain amount of metal scaffolding too. The architect in charge of the Chartres Cathedral published a pamphlet where he showed his colleagues how the components could even be used to produce a human shelter. First, he said the scaffolding would be used to take down stained glass windows. Then, the same scaffolding would be used to build a lattice in front of fragile sections of the architecture, and be used to support a grid of sandbags. When it came time to fill the sandbags, this would be done by digging a trench around the cathedral, using the dirt to fill the bag and using *this same trench as a refuge for the monuments architect,* who could reside in a protective perimeter.

Monuments protection was therefore not that different from camouflage after all. Rather than borrowing a pattern from its surroundings as in camouflage, monuments conservators borrowed patterns, habits, and norms from "passive defense" and applied them to the perimeter around monuments. Indeed, in its manual the League of Nations did not engage in any of the aesthetic gestures that various nations had to dramatize protection: no "before and after" photographic pairs, very few claims to aesthetics. But it is significant that it abstracted the image of a pile of sandbags into a universal drawing of a grid. Rather than a tectonic pile, the sandbag matrix became an abstract grid, which could be collaged onto any kind of architecture, and which one was to imagine accompanied – humanized – by a drawing of human scale figure.

Apotropaia: how to be "moved" by protection

Let me return, in conclusion, to the question I began with – how are these striking structures supposed to "move" us? I would like to give a slightly less provisional answer, by arguing that protective structures that were supposed to act as "apotropaias:" objects that have the power to repel the enemy. I borrow this term, "apotropaia" from ancient Greek, where it was used to describe an artifact depicting a mythical object whose meaning, or iconography, indicates a defensive gesture – such as Medusa's head. But the reference is found not only in ancient Greek art. Scholars of Islamic art and architecture who have studied fortified city walls of the Near East in the 10th, 11th and 12th Centuries where the sculptural motifs were supposed to have an apotropaic efficacy. On these walls you find sculptural motifs representing mythological animals that were meant to ward off certain dangers: snakes sculpted to protect against infestation; lions to scare away invaders, etc. The art historian Persis Berlekamp has argued that rather than looking for, precise iconographic significance to explain why these animals were affixed to city gates, rather than asking "what was the meaning" of the snakes, lions, and patterns, that their significance was in the *effect* they were meant to have.

If these objects had a "slippery iconography" it is because their significance came not from their being fixed symbols, but rather their capacity to trigger *action*. Berlekamp also argues that they obeyed "multiple modalities" of apotropaic efficacy, often at the same time. Some worked by

symmetry: a snake depicting an infestation was supposed to mirror the danger it repelled. Others worked by sympathy: a beautiful lion worked by attracting the enemy and thus disarming them. And finally, others could work by sensation: by triggering certain sensory reactions that worked to push an enemy away. The point is not that these were naïve superstitions – Berlekamp tells us that while apotropaic work relied on an assumption that inert stone had magic-like properties of animated beings, they can be seen rather as an expression of a consensus: a belief that these images worked on others.

Of course there is great a difference between the way art and belief were associated in the 11th and the 20th Centuries. If medieval apotropeias were attached to city walls, it is because wars in the Middle Ages were fought by invading cities, and defense was performed by building fortified walls around their perimeter. In the 20th Century, as I have been discussing throughout this lecture, monuments stood in a vast and deterritorialized field of aerial warfare. Indeed, it is partly this removal of walls and borders that made sandbagged monuments so poignant, left as they were to stand in vulnerable cityscapes. The idea that these objects had a kind of apotropeiac agency is still useful however because it allows us to locate these sandbagged structures in the realm of belief – of what Alois Riegl called "the cult of monuments." Just as in the 12th Century, in 1942 entire populations at war hoped that architectural monuments had a certain power of enchantment and that the labor devoted to their conservation was an index of this power.

So, just as in the Middle Ages, we can identify a range of modes of apotropaic designs to help us understand the aesthetic gestures made by those who constructed these protective perimeters. Rather than corresponding to Greek myth, they correspond in a sense to the international ideologies that were being debated in the meeting rooms of Geneva: moral disarmament and of the idea of humanization of war – but articulate them at the level of an aesthetic ideology. Three attitudes stand out:

1. (Antipathy) Protection motivated by a belief in the opposition between art and war
2. (Sympathy) Protection motivated by a desire to seduce the enemy into rescinding an attack
3. (Irony) Protection which operates by fooling the enemy in some way

The first belief motivating monuments protection in the 20th century is an Enlightenment aesthetic, according to which art and war are morally opposed and any protection should therefore express this opposition, almost repelling the viewer. Paul Clemen could be placed in this camp. Recall that he believed that "All artistic culture and war are two poles which repel each-other," and that monuments were to be spared destruction as much as possible precisely because they were the antithesis of violence. While Clemen himself did not build many structures, rhetoric similar to his can be found frequently in the German-language literature about monuments protection, and the descendent organization, the Kunstchutz. In 1942 the German government published a manual of civil defense titled *Fliegerschutz für Kunst und KulturDenkmaler*, which explicitly denied the possibility of aesthetic consumption and protection. "These protective structures are not beautiful," the booklet wrote, "they are a temporary disfigurement." It is fitting, then, that German conservators invented a kind of encasement that tended to adapt the forms of funerary architecture. In 1941 the architect on call at the Cologne cathedral designed a bunker to contain the reliquary art that he had removed from the variousplaces across the cathedral. This structure, which was inside the choir, had what he called "a dignified impression" because, as he wrote, he used "brickwork and external treatment" that "blended harmoniously into the cathedral architecture."

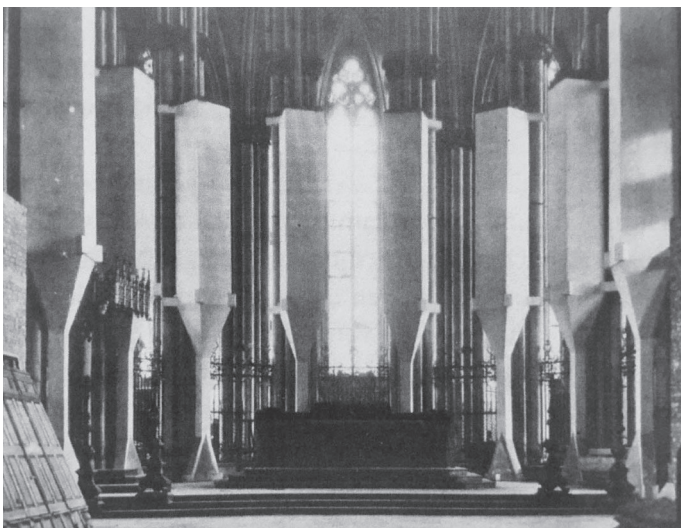


Figure 14. Protective structures for sculptures in the piers of Cologne Cathedral by Arnold Güldenpfennig, 1944.

Also funerary were the encasements he designed around the statuary that existed midway up the Gothic piers. At first having only covered them in blankets, over the course of the war, Guldenpfennig gradually added more external layers, with wood, then mansonry, so that the statues began to look like they were encased in coffins or tombs. If, officially, the policy of the Nazi state was that there could never be an artistry to protection, at least the architecture could be funerary. Upon entering the church, a visitor might understand the atmosphere of death that emanated from this object and thus refrain from further damage to the art.

The second aesthetic ideology surrounding monuments and war in the 20th Century is a belief that art repels violence not morally but aesthetically – that is, that there is a specific formal and visual power that art exerts against its own would-be destroyer. This view has a long history in western aesthetics. For example, already in 1452 we find this statement in Book 6 of Leon Battista Alberti's 1452 *The Art of Building in Ten Books:*

> "Beauty may even influence an enemy, by restraining his anger and so preventing a work from being violated. No other means is as effective in protecting a work from damage and human injury as is dignity and grace of form."

Jumping to World War II, the greatest density of such structures which were designed to have "dignity and grace of form" can be found in Italy. Recall that, in the 1942 Italian album I showed, photographs of the work of art seemed to invoke a kind of mental protection. Beautiful photography, staged at a distance away from the object, *pushed the viewer back* from the monument, through the very act of looking. Certainly this aesthetic ideology is found in the journals of many of the Italian conservators – such as the one who directed the protection in Ravenna, where workers built this smooth shell over the altar inside the cathedral. The goal may well have been to make – and photograph – an object so "dignified" that nobody would dare puncture it. Not only the structures built by the Italian monuments officers, but also those made by the German-directed *Kunstschutz*, such as in the Florence Uffizzi, took on an especially rarified form, permutations of the funerary architecture that was enhanced with a sheen or aura.

And there is a third aesthetic ideology that manifests itself in protective designs, which grows from 19th-Century socialist movements, where anyone's attraction to art can be used as a weapon against them. Throughout

Figure 15. Florence Uffizzi, protection of statues by the German Kunstschutz, 1944

the 19th Century, anarchists, socialist and communists thought the association between "culture and property" was a bourgeois weakness to be exploited in a proletariat revolution. As a result, objects of art and architecture could be used in the global class struggle, in one way only: to deceive and defeat the bourgeoisie. One apocryphal story, for example, was that during the Dresden uprisings of 1849, the anarchist leader Bakunin proposed to place Rafael's Sisitine Madonna on the barricades as a kind of shield, to protect the revolutionary masses behind it. "The Prussians," he assured his followers, "were too cultural to fire on Raphael." The story was retold in the 1960s by the situationist Guy Debord, and more recently updated by the artist Ahmed Ogut, in series of installations titled *Bakunin's Barricade*. Here, Ogut visits museums, choses paintings from their collection, (in a 2015 version at the Van Abbemuseum's Collection, we see a painting by Léger, another by Picasso, one by Lissizky) and displays them in one of the galleries but on a barricade he constructs, with fences and cars and other street furniture. The socialist critique is not that art has magical powers, but that other people believe it does.

Of course, no anarchist took on the task of protecting monuments during World War II. But, if this third mode of efficacy starts from the notion that art and architectural objects have a power of enchantment, but it takes design to use it correctly, then this was essentially the position taken by the Junta in Spain, when they insisted on transforming religious art into modernist objects and telling the public "what to see." More broadly, this notion of an expanded field of belief in monumental efficacy, can be heard indirectly in many accounts of monuments' protection activation. Several journal entries of the architect Guldenpfennig, for example, speak of the cynicism with which the Nazi leadership directed resources towards monuments protection only when the Allies seemed near to bombing—because the propaganda value of a destroyed monument would be higher if the Germans had demonstrated willingness to protect it.

Thinking about these protective structures as apotropaias act helps to remember the extent to which the repetitive gesture of "passive defense" was supposed to be calming to the average non-combattant. The painstaking, labor-intensive sandbag architecture that was invented to protect monuments associated cultural value with effort. Whatever the specific mode, the very sight of these protective sandbags communicated care, and in a medium that was as low-fidelity as possible: with a soft, shifty, material grid. If sandbagging survives to this day, even as warfare is hyper-mediatized, it is because of this third mode of apotropaic protection. Anyone not believing in the power of art to repel violence is forced to act anyways, in one direction or another. It is in this obligation – not to an international law, but to an apparent international sentiment – that the legacy of the sandbag protective matrix can best be seen and felt today.