



The Sultan's Database: Categorical Violence and the Ottoman Genealogy of Algorithmic Governance

Sultanın Veritabanı: Kategorik Şiddet ve Osmanlı Algoritmik Yönetim Soykütüğü

ÖZET

1880 ile 1893 yılları arasında Sultan Abdülhamid II, yaklaşık 33.000 fotoğrafın 900'den fazla albümde derlendiği kapsamlı bir fotoğraf projesini görevlendirdi; bu albümlerden 1.819 fotoğraf seçildi, beş idari kategoriye ayrıldı ve Kongre Kütüphanesi ile Britanya Müzesi'ne diplomatik hediye olarak gönderildi. Bu makale, Hediye Albümlerinin bir fotoğraf koleksiyonu değil, proto-altyapısal bir görüntü sistemi, fotoğrafların imparatorluk okunabilirliği ve taksonomik kontrol araçları olarak işlev gördüğü devlet kontrolündeki bir görsel veri tabanı oluşturduğunu savunmaktadır. Albümlerin beş kategorili yapısı, bu makalede kategorik şiddet olarak adlandırılan şeyi hayata geçirdi: bireysel görüntüler aracılığıyla değil, hangi nüfusların, mekanların ve uygulamaların görünürlüğü hak ettiğini ve hangilerinin sistematik olarak görünmez kılındığını belirleyen sınıflandırma sistemi aracılığıyla işleyen zarar. Eş zamanlı olarak, suçlu kimlik albümleri, hapisane fotoğraf emirleri ve nüfus kayıtlarını içeren paralel bir fotoğraf aygıtı, içe dönük gözetim ve idari kontrol için aynı altyapıyı kullandı. Bowker ve Star'ın sınıflandırma teorisinden, Sekula'nın fotoğraf arşivleri analizinden, Scott'ın devlet okunabilirliği çerçevesinden ve algoritmik yönetim üzerine eleştirel çalışmalardan yararlanan makale, Osmanlı'nın bu iki görsel aygıtından Cumhuriyet kimlik belgesinin fotoğrafik kimliklendirmeyi evrenselleştirmesine (1926-1934), MERNİS'in 122 milyon nüfus kaydını dijitalleştirmesine (1997-2002) ve KGYS'de yapay zeka destekli yüz tanımanın kullanılmasına (2005-2025) uzanan kurumsal soy ağacını izlemektedir. Argüman analogik değil, soybilimseldir: çağdaş Türk dijital yönetişiminin sınıflandırma kategorileri, rejim değişiklikleri boyunca belgelenmiş kurumsal aktarım yoluyla Osmanlı idari yapılarından türemiştir. Bu soybilim, Bentham, Foucault ve dijital panoptikon aracılığıyla gözetim çalışmalarının Batı merkezli dönemlendirmesine müdahale ederek, algoritmik sistemlerin kategorik şiddetinin teknolojik bir yenilik değil, Batı dışı bir emperyal bağlamda geliştirilen görsel-idari mantıkların yoğunlaşması olduğunu göstermektedir. Algoritma en yeni araçtır. Kategorik şiddet ise yapıdır.

Anahtar Kelimeler: kategorik şiddet, altyapısal imaj, Osmanlı fotoğrafçılığı, algoritmik yönetim

ABSTRACT

Between 1880 and 1893, Sultan Abdülhamid II commissioned a photographic project producing some 33,000 photographs in over 900 albums, from which 1,819 were classified into five administrative categories and dispatched as diplomatic gifts to the Library of Congress and the British Museum. This article argues that these Gift Albums constituted not a photographic collection but a proto-infrastructure image system, a state-controlled visual database in which photographs functioned as instruments of imperial legibility and taxonomic control. The albums' structure enacted what this article terms categorical violence: harm operating through the classificatory system determining which populations, spaces, and practices merit visibility and which are rendered invisible. Simultaneously, a parallel apparatus including criminal identification albums, prison photography orders, and population registers deployed the same infrastructure for inward-facing surveillance. Drawing on Bowker and Star's classification theory, Sekula's analysis of photographic archives, Scott's state legibility framework, and scholarship on algorithmic governance, it traces the institutional genealogy from these twin Ottoman visual apparatuses through Republican Turkey's universalisation of photographic identification (1926–1934), MERNİS's digitisation of 122 million population records (1997–2002), and AI-powered facial recognition in KGYS urban surveillance (2005–2025). The argument is genealogical, not analogical: contemporary Turkish digital governance's classificatory categories descend from Ottoman structures through documented institutional transmission across regime changes. This genealogy intervenes in surveillance studies' Western periodisation via Bentham, Foucault, and the digital panopticon, demonstrating that algorithmic categorical violence is not technological novelty but an intensification of visual-administrative logics developed within non-Western imperial context. The algorithm is the medium. Categorical violence is the structure.

Keywords: categorical violence, infrastructural image, Ottoman photography, algorithmic governance

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INTRODUCTION AND THE GENEALOGY PROBLEM

Contemporary scholarship on algorithmic surveillance operates within a remarkably narrow genealogical frame. The dominant intellectual trajectory runs from Bentham's panopticon through Foucault's theorization of disciplinary power to analyses of digital surveillance capitalism (Foucault, 1977; Lyon, 2003; Zuboff, 2019). Within this lineage, the emergence of photographic classification as a governance technology is typically traced to nineteenth-century European criminological projects such as Alphonse Bertillon's anthropometric identification system and Francis Galton's composite portraiture, foundational moments when photography became embedded in bureaucratic systems of social sorting (Sekula, 1986). This genealogy, however Western in its orientation, has come to function as the unmarked standard through which contemporary surveillance technologies are understood and critiqued.

What this genealogy obscures is a parallel history of visual governance that developed outside European metropolitan centers yet operated with comparable sophistication and, in certain respects, with greater systemic ambition. Between 1880 and 1893, Sultan Abdülhamid II of the Ottoman Empire commissioned an extensive photographic project that produced approximately 33,000 photographs, organized into over 900 albums, systematically documenting the empire's military, educational, industrial, medical, and infrastructural modernization (Eldem, 2015; Micklewright, 2003). From this vast archive, 1,819 photographs were selected, organized into 51 albums, and presented as diplomatic gifts to the United States Library of Congress and the British Museum (Çelik, 2015; Greene, 2011). These were not photography albums in any conventional sense. They were, as this article argues, a proto-infrastructural image practice, a state-controlled visual database in which photographs functioned primarily as instruments of imperial legibility and taxonomic control rather than as representational objects.

The significance of this Ottoman visual apparatus extends far beyond the history of photography. The Abdülhamid Gift Albums enacted what this article terms *categorical violence*, a form of epistemic and political harm that operates not through the content of individual images but through the classificatory system that organizes, includes, and excludes them. The Albums' five-category taxonomic structure (military modernization, public services, urban views, religious heritage and historical monuments, and sultanate resources) did not merely document the empire. It rendered the empire *administratively legible* to a Western audience by determining which populations, practices, and spaces deserved visibility and which were consigned to systematic invisibility. The albums' taxonomic categories structurally excluded the spaces and practices of Ottoman urban life that did not conform to the modernization frame, an exclusion that, as Section 3 will argue, operated not through deliberate concealment but through the categorical logic of the classificatory system itself. The violence of this operation lies in the categories themselves, in the taxonomic logic that decides what counts as evidence of modernity and what is erased as evidence of backwardness.

This classificatory operation, I argue, is structurally continuous with the logic of contemporary algorithmic governance. Facial recognition systems, predictive policing algorithms, and platform-based surveillance technologies all enact categorical violence through classification: sorting populations into administrative categories, rendering certain subjects hyper visible while others disappear from the data (Benjamin, 2019; Browne, 2015). The connection between Ottoman photographic classification and algorithmic categorization is not metaphorical but genealogical. As I have argued elsewhere, contemporary photography functions less as a representational medium than as data infrastructure within algorithmic systems, operating through algorithmic readiness, the condition of being perpetually available for computational sorting and classification (Gülaçtı, 2025). The present article historicizes this argument by tracing the infrastructural image's roots to a specific, non-Western imperial project, demonstrating that the datafication of vision has deeper and more geographically diverse origins than existing scholarship recognizes.

Recognizing the Ottoman genealogy of surveillance practice carries significant theoretical consequences. First, it challenges the assumption that visual governance technologies moved unidirectionally from European metropolises to colonial peripheries. The Ottoman Empire was not a passive recipient of Western photographic practices but an independent innovator of systematic visual administration, deploying photography as a technology of state legibility with a sophistication that rivaled, and in its systemic scope, arguably exceeded, contemporary European applications (Deringil, 1998). Second, it reveals a mode of visual governance that was *taxonomic* rather than *disciplinary* in Foucault's sense. Where the panoptic model operates through the internalization of surveillance by individual subjects, the Ottoman visual apparatus operated through the comprehensive categorical ordering of territories, populations, and institutions for administrative purposes. This distinction matters since it suggests that the classificatory logic of contemporary algorithmic systems may owe as much to imperial taxonomic practices as to disciplinary normalization. Third, and perhaps most consequentially, it demonstrates that the 'categorical violence' enacted by contemporary technologies, namely,

the harm that flows from being classified, misclassified, or rendered invisible by classification systems, is not a novel condition produced by digital technology but an intensification of visual-administrative logics with deep imperial roots.

This article addresses five interrelated research questions:

1. To what extent did the Abdülhamid Gift Albums operate as a visual database structured by administrative taxonomy rather than representational logic, and what does this reveal about the operational function of photographs within state-controlled systems?
2. How did the Albums' classificatory structure, including its systematic exclusions, enact categorical violence, and what populations, practices, and spaces were rendered invisible through the taxonomic frame?
3. In what ways did the Ottoman visual apparatus operate through asymmetrical legibility, a sovereign who sees but is not seen, and how does this structure prefigure the power asymmetries of contemporary algorithmic governance?
4. Is the continuity between Ottoman photographic classification and contemporary digital surveillance in Turkey genealogical (tracing institutional and infrastructural persistence across regime changes) rather than merely metaphorical?
5. What are the theoretical consequences for surveillance studies of inserting the Ottoman case into the field's predominantly Western genealogical framework?

The argument unfolds in seven sections. Following this introduction, Section 2 develops the theoretical framework, bringing Bowker and Star's (1999) analysis of classification systems into conversation with Sekula's (1986) analysis of photographic archives and contemporary scholarship on algorithmic harm to articulate the concept of categorical violence as an analytical tool. Section 3 turns to the empirical core of the article: a sustained analysis of the Abdülhamid Gift Albums as visual infrastructure, examining their taxonomic structure, the centralised production apparatus that ensured compositional uniformity across competing photographic studios, and the exclusion logic through which categorical violence was enacted. Section 4 examines the asymmetrical legibility at the heart of the Ottoman visual apparatus, in other words, the structural paradox of a sovereign who rendered his empire maximally visible while remaining invisible himself, and who simultaneously deployed photography for outward-facing propaganda and inward-facing bureaucratic surveillance. Section 5 traces the institutional genealogy from Ottoman visual administration through Republican-era identification practices to the digitisation of the population register, following the chain from the Ottoman Police Directorate's (*Zaptiye Müşiriyeti*) photographic albums (1868) and the Population Registry Regulation (*Sicill-i Nüfus Nizamnamesi*) (1881) through the Republican nüfus cüzdanı and its universalisation of photographic identification (1926–1934) to MERNİS's computational turn and the biometric identity card (1972–2016), arguing that classificatory visual infrastructure persists across regime changes even as its technical substrate transforms. Section 6 turns to the contemporary apparatus, examining how the Kent Güvenlik Yönetim Sistemi (KGYS) and its facial recognition capabilities complete the genealogical chain by adding automated real-time visual capture to the digital identification infrastructure documented in Section 5, and how the 2025 deployment of AI-powered surveillance against protesters empirically demonstrates the return of asymmetric visibility, the same structural asymmetry between the classifying sovereign and the classified subject that defined the Hamidian photographic apparatus, now automated and operating at computational scale. Section 7 draws out the theoretical implications for surveillance studies, arguing that inserting the Ottoman case fundamentally reframes the field's genealogical assumptions and that the categorical violence of contemporary algorithmic systems is not a technological novelty but an intensification of visual-administrative logics with imperial roots.

INFRASTRUCTURAL IMAGES, CATEGORICAL VIOLENCE, AND VISUAL GOVERNANCE

This section develops three interconnected theoretical concepts, which are infrastructural images, categorical violence, and visual governance through legibility, which together provide the analytical apparatus for examining the Abdülhamid Gift Albums. Rather than applying existing frameworks wholesale, the article synthesizes insights from infrastructure studies, critical classification theory, visual culture, and surveillance studies to construct a theoretical vocabulary adequate to the Ottoman case and its contemporary resonances.

From Operational to Infrastructural Images

The recognition that photographs can function as instruments rather than representations has gained significant theoretical traction over the past two decades. Farocki's concept of "operative images", images "that do not

represent an object, but rather are part of an operation" (Farocki, 2004, p. 17), marked a decisive intervention by identifying a class of images whose primary purpose is neither aesthetic contemplation nor documentary record but the execution of a technical function. Farocki developed this concept through analysis of military imaging systems such as guided missiles, surveillance cameras and automated targeting, in which images serve as operational components within machinic processes that proceed largely without human perception (Farocki, 2004, pp. 12–17). Paglen extended this analysis to the broader ecosystem of machine vision, arguing that "the overwhelming majority of images are now made by machines for other machines, with humans rarely in the loop" (Paglen, 2016, para. 3). For Paglen, the landscape of contemporary visuality is constituted less by representation than by "activations and operations" (Paglen, 2016, para. 24), an observation that fundamentally destabilizes the representational paradigm upon which most visual culture theory depends.

These interventions are indispensable, yet they share a limitation relevant to the present article. Both Farocki (2004) and Paglen (2016) locate the operational turn in images primarily within twentieth- and twenty-first-century technological systems. Their genealogies run through military imaging, computer vision, and digital platforms, all of which are infrastructures of the post-industrial West. The concept of the *infrastructural image*, as I have developed it elsewhere (Gülaçtı, 2025), retains what is productive in Farocki and Paglen's frameworks, the insistence that images operate rather than merely represent, while embedding this operational logic within a broader understanding of infrastructure as a relational, sociotechnical system.

Drawing on Star and Ruhleder's (1996) foundational theorization, infrastructure is understood here not as a fixed technical object but as a fundamentally relational condition, something "becomes infrastructure in relation to organized practices" (Star & Ruhleder, 1996, p. 113). Star and Ruhleder identified key properties of infrastructure such as embeddedness in other structures, transparency to use, reach beyond a single site, learned as part of membership, and visibility only upon breakdown (Star & Ruhleder, 1996, pp. 113–114), which prove remarkably productive when applied to photographic systems. An infrastructural image, then, is not simply an operative image in Farocki's sense, an image executing a discrete technical function, but an image embedded within a larger sociotechnical system of classification, circulation, and governance, one that operates transparently, and invisibly, until it breaks down or is subjected to critical scrutiny. The Abdülhamid Gift Albums, I argue, constitute an early instance of precisely this condition, namely, photographs embedded within an imperial bureaucratic infrastructure, organized according to administrative taxonomies, and designed to render territories and populations legible to sovereign and foreign audiences alike.

Categorical Violence through Classification as a Mode of Power

If the infrastructural image describes *how* photographs function within governance systems, categorical violence describes the *harm* that this functioning enacts. The concept draws on two convergent intellectual traditions, Bowker and Star's (1999) sociology of classification and critical race scholars' analyses of algorithmic discrimination.

Bowker and Star's *Sorting Things Out* demonstrated that classification systems are never merely technical or neutral; on the contrary, they are "a scaffolding of information infrastructures" that actively shapes social worlds (Bowker & Star, 1999, p. 10). Their analysis of systems including racial classification under South African apartheid revealed that "each standard and category valorizes some point of view and silences another" (Bowker & Star, 1999, p. 5). Crucially, Bowker and Star (1999) showed that the violence of classification is often invisible as it operates through the naturalization of categories that come to appear as descriptions of reality rather than as political impositions upon it. Categories produce what they purport to describe. In other words, they make the world conform to their taxonomic logic. This insight is essential for understanding the Abdülhamid Gift Albums, whose five-category structure did not merely document the Ottoman Empire but actively constituted what the empire *was* for its Western audiences, a modern, ordered, militarily competent state rather than the 'Oriental' chaos of European imaginations.

Sekula's (1986) landmark analysis of nineteenth-century photographic archives provides the crucial bridge between classification theory and visual governance. Sekula (1986) demonstrated that the emergence of photographic archives in the work of Alphonse Bertillon and Francis Galton constituted "two poles of positivist attempts to regulate social deviance by means of photography" (p. 18). Bertillon's system of individuating identification and Galton's composite portraiture represented, for Sekula, complementary strategies for subordinating photographs to statistical and bureaucratic logic. What Sekula termed the "shadow archive", the comprehensive classificatory system within which every photographic portrait takes its place in "a social and moral hierarchy" (Sekula, 1986, p. 10), anticipated in significant respects the concept of the infrastructural image: photographs functioning not as autonomous representations but as entries within a larger system of social sorting.

However, Sekula's analysis, like Foucault's (1977) theorization of disciplinary power from which it draws, remains anchored in European metropolitan institutions such as French police administration, British eugenics and the Panopticon. This is precisely where critical race and postcolonial scholars have mounted their most significant challenges. Browne (2015) demonstrated that "an understanding of the ontological conditions of blackness is integral to developing a general theory of surveillance" (p. 8), tracing how what she terms "racializing surveillance", surveillance that "reifies boundaries, borders, and bodies along racial lines" (Browne, 2015, p. 16), has roots not in Bentham's Panopticon but in the slave ship, the branding iron, and the lantern laws of colonial governance. This intervention showed that Foucault's account of the transition from sovereign spectacle to disciplinary surveillance was incomplete as "when that body is black, the grip hardly loosened during slavery" (Browne, 2015, p. 38). Benjamin (2019) extended this analysis into the digital domain through the concept of the "New Jim Code", "the employment of new technologies that reflect and reproduce existing inequities but that are promoted and perceived as more objective and progressive than the discriminatory systems of a previous era" (Benjamin, 2019, pp. 5–6). Benjamin's analysis demonstrates that algorithmic classification does not merely inherit racial categories but actively produces racialized subjects through what she describes as "discriminatory design" (Benjamin, 2019, p. 3). Azoulay (2019) extends this analysis to the photographic archive itself, arguing that the imperial conditions under which photographs were produced, collected, and classified do not belong to a completed past but constitute an ongoing political condition, that the violence of the imperial archive persists in the categories it established and the subjects it dispossessed, regardless of whether those archives are currently being viewed or consulted. This is close to the concept of categorical violence as the article deploys it: harm that is structural and temporal, constituted in production rather than contingent on reception.

The concept of *categorical violence* as deployed in this article synthesizes these traditions. It names the specific form of harm that operates not through the content of individual images but through the classificatory system that organizes them. Categorical violence is enacted when a taxonomy determines which subjects deserve visibility and which are consigned to invisibility; when classification systems impose identities that serve governance rather than describe experience; and when the categories themselves, specifically, their boundaries, their inclusions, and their exclusions, become naturalized as descriptions of reality. This form of violence is infrastructural in precisely Star and Ruhleder's sense: it operates transparently, becomes visible only upon breakdown or critical scrutiny, and is learned as part of membership in communities of practice.

Visual Governance Through Legibility

The third theoretical strand concerns how visual systems produce governance effects. Here, Scott's (1998) analysis of state legibility provides an essential framework. Scott (1998) argued that the central problem of statecraft is making populations and territories administratively legible, readable, calculable, and therefore governable through practices of simplification and standardization, including censuses, cadastral maps, surnames, and standardized measurement. Scott (1998) showed that such state simplifications "did not successfully represent the actual activity of the society they depicted, nor were they intended to; they represented only that slice of it that interested the official observer" (p. 3). The resonance with the Abdülhamid Gift Albums is striking as the Albums rendered the Ottoman Empire legible to Western audiences by representing only those dimensions of imperial life that served the Sultan's modernization narrative, while systematically excluding everything that did not conform to the desired administrative image.

What Scott's framework enables, and what Foucault's panopticism obscures, is the recognition that visual governance can operate *taxonomically* rather than *disciplinarily*. The panoptic model, as Foucault (1977) theorized it, operates through the internalization of surveillance by individual subjects who, aware of being potentially observed, regulate their own behavior (pp. 200–203). Taxonomic governance, by contrast, operates through the comprehensive categorical ordering of populations and territories for administrative purposes, not through making individuals self-policing but through making collectivities machine-readable. The distinction matters because it reframes the question of visual power: the issue is not whether any individual subject is being watched but how entire populations are being classified, sorted, and rendered available for governance through visual systems.

Lyon's (2003) concept of "social sorting", the process by which surveillance technologies classify and categorize populations to determine differential access to resources, mobility, and rights (pp. 1–3), provides the contemporary articulation of this same logic. Social sorting, as Lyon (2003) argued, is the defining function of contemporary surveillance, not the disciplining of individual subjects but the categorical management of populations. When we recognize that the Abdülhamid Gift Albums enacted precisely this logic, sorting the empire's visual material into administrative categories that determined what counted as

evidence of modernity and what was relegated to invisibility, the genealogical connection between Ottoman visual governance and contemporary algorithmic classification becomes not metaphorical but structural.

Together, these three conceptual strands of the infrastructural image, categorical violence, and visual governance through legibility provide the analytical vocabulary for reading the Abdülhamid Gift Albums not as historical curiosities or propaganda artifacts but as an early and sophisticated instance of the visual-administrative logic that now operates at algorithmic scale. The following sections apply this framework to the empirical case.

THE ALBUM AS DATABASE OF TAXONOMY, CLASSIFICATION, AND THE PRODUCTION OF IMPERIAL LEGIBILITY

The conventional label for the Abdülhamid II photography collection, photographic albums, names the object while concealing its logic. Albums presuppose aesthetic selection, personal memory, and chronological narrative, the organizing principles of collection as cultural practice. What the fifty-one volumes dispatched to Washington and London in 1893 and 1894 enacted was something structurally different, a systematic conversion of imperial territory, populations, and institutions into classified, retrievable, sequentially numbered visual data. To read these objects as albums is to misread them at precisely the level that matters most analytically. The sections that follow read them instead as what they were: a database, organized by administrative taxonomy, produced by a distributed multi-agent system, and designed not to express but to enumerate. Recovering this classificatory logic including its architecture, its taxonomic subjects, its constitutive exclusions, and its asymmetrical structure of visibility is the task of Section 3.

Architecture of the Hamidian Photographic System

The Abdülhamid II Gift Albums, presented to the United States and the United Kingdom in 1893 and 1894 respectively, constitute one of the most systematically organized visual projects of the nineteenth century. Created in the wake of the 1893 World's Columbian Exposition in Chicago, which itself is a theater of imperial self-presentation organized through the language of comparative modernity, the fifty-one albums now held at the Library of Congress contain 1,819 photographs produced between approximately 1880 and 1893 (Library of Congress, 2003). These gift albums, however, represent only a fraction of the broader photographic apparatus assembled under Abdülhamid II's reign. The palace amassed some 36,535 images in Istanbul during his thirty-three-year rule, systematically collected and organized in the Yıldız Palace library under the sultan's personal supervision (Hyde Nolan, 2019).

What distinguishes this photographic project from its contemporaries such as Ottoman commercial photography, European colonial surveys, or the World's Fair displays that flanked it is the degree to which it operated according to what can be recognized, retroactively, as database logic. The Albums were organized not around narrative or aesthetic criteria but according to subject-based taxonomic categories: educational facilities and students; military and naval personnel and facilities; technological infrastructure including factories, mines, harbors, and fire brigades; hospitals and government buildings; Byzantine and Ottoman antiquities; and panoramic landscapes (Library of Congress, 2003). The Library of Congress itself notes that the Albums are "generally arranged by subject," each volume assigned a LOT number with photographs numbered sequentially within it, a classification structure whose operational grammar anticipates the indexed, searchable datasets of digital image management systems. As Allen (1988) observed in the first systematic analysis of the collection, the court's organizational hand extended to every aspect of image selection and sequencing, transforming the album from a photographic object into what he characterized as a controlled institutional output (Allen, 1988, p. 34, in Gavin, 1988).

The production of the Albums was itself organized as a distributed, multi-agent system. Six photographic firms operated under court commission, chief among them Abdullah Frères, Sébah & Joaillier, and Phébus, supplemented by the Photographic Unit of the Imperial School of Engineering and the military photographer Ali Rıza Paşa, a staff colonel in the Ministry of War, who contributed two albums comprising sixty photographs (Hyde Nolan, 2019). The result, as Hyde Nolan (2019) notes, is a project characterized by "collective authorship" combined with "a stylized and unified mode of representation through their very sober and didactic formal characteristics." The inconsistencies of individual photographic style were subordinated to the album's systemic logic. In other words, whatever variation existed at the level of aesthetic execution, the taxonomic categories, the formats, and the operational goal of rendering the empire legible remained constant. The camera's eye, as Hyde Nolan argues, "was by extension the eye of the court" (2019). This formulation names something the existing literature has undertheorized. The Albums' photographic agents were not autonomous authors but nodes in a production system whose coordinating intelligence was institutional rather than individual.

Yet the apparatus was not without friction, and the moments of friction are analytically instructive. Star and Ruhleder's definition of infrastructure specifies that it becomes visible precisely "upon breakdown", when the system fails to function transparently, its material and social dependencies are exposed (Star & Ruhleder, 1996, p. 113). The Hamidian photographic system experienced such breakdowns. In 1878, Abdülhamid II stripped Abdullah Frères of their court photographer title after the studio's association with Russian generals during the Russo-Turkish War of 1877–1878 aroused the sultan's displeasure. The Armenian firm was replaced by the Ottoman Greek photographer Vassilaki Kargopoulo, appointed *Photographe de Sa Majesté Impériale le Sultan* in 1879 (Öztuncay, 2000; Hyde Nolan, 2019). When Kargopoulo died unexpectedly of a heart attack in 1886, the sultan reappointed Abdullah Frères to their former post (Hyde Nolan, 2019). The episode exposes the system's constitutive vulnerability. In other words, the classificatory machine depended on a small number of non-Muslim commercial studios of Armenian, Greek origin whose political allegiances could not be guaranteed by the sovereign authority the apparatus was designed to serve. At the level of the image itself, similar traces of friction persist. Hyde Nolan notes the visibility of neck clamps, devices used to hold student subjects immobile during long exposures, in portraits from the naval school albums (2019). These operational instruments, which the photographic convention of the period would normally have concealed, remain visible in the final prints as material evidence of the apparatus's coercive mechanics. That the system recovered from its political disruptions, namely, that the sovereign could dismiss, replace, and reinstate its photographic agents without interrupting the taxonomic project's fundamental operation, is itself characteristic of infrastructure. Robust systems absorb breakdowns through redundancy and repair, and their seams become visible only to those who look for them (Star, 1999, p. 382). The unified visual output of the albums was not the absence of conflict but the management of it.

Gavin, the first scholar to produce a comprehensive catalogue of the collection, characterized the Albums as an "imperial self-portrait", the empire's self-representation for Western diplomatic audiences (Gavin, 1988, p. 4). This characterization has organized subsequent scholarship on the Albums, situating them within the tradition of diplomatic gift exchange and propaganda aimed at countering European perceptions of Ottoman decline. What the 'self-portrait' framework cannot adequately account for, however, is the Albums' organizational architecture, specifically, the subject categories, the sequential numbering, the distributed authorship, the scale of the underlying collection from which the Albums were excerpted. These features belong not to the logic of portraiture but to the logic of the survey: a form whose epistemological ambition is not to express but to enumerate, not to represent but to classify and make manageable.

Taxonomic Subjects and Classifying the Modern Empire

The subject categories deployed across the Hamidian Albums are not neutral organizational conveniences. They constitute a taxonomy, a system that renders the empire intelligible by distributing its contents into discrete, non-overlapping classes. To classify the empire's institutions by type (military, educational, industrial, architectural, ethnographic) is already to impose a particular epistemic order as it asserts that the empire can be comprehended through its institutional categories, that its provinces are commensurable units of a single modern polity, and that photographic documentation can render this polity transparently legible to external observers.

This taxonomic imperative places the Hamidian Albums firmly within the nineteenth-century photographic survey movement, which is a global phenomenon that encompassed the US Geological Survey's documentation of the American West, the British *People of India* typological albums, French colonial surveys of North Africa, and Japanese imperial documentary photography. Hyde Nolan (2019) argues that the Hamidian Albums "must be placed within the larger context of the nineteenth-century photographic survey movement, much like those in Japan and the United States, which reveals the broader effects of imperial photographic agendas across the globe". The crucial distinction she draws, however, and one that our theoretical framework allows us to develop further, is that where colonial surveys typically aimed to render the colonized legible to the colonizing power, the Hamidian project represents a form of Ottoman self-categorization directed outward: an empire making itself legible on terms it sought, at least partially, to control.

The precedent for the thematic organization of peoples alongside infrastructure was already established in Ottoman photographic production. The *Elbise-i Osmaniyye* (1873), compiled by Osman Hamdi, Victor Marie de Launay, and Pascal Sébah for the Vienna World's Fair, had organized the empire's diversity through the visual logic of sartorial style. Images were arranged as "a heterogenous matrix of ethnographic types," using dress to sort subjects into legible categories (Hyde Nolan, 2017; 2019). The Hamidian court went considerably further. The 1886 Söğüt Photographic Expedition, the first official ethnographic commission, gifted to Chancellor Otto von Bismarck, documented "semi-nomadic Turkmen groups in costume as evidence of the

Ottoman Empire's mythic and ethnic origin," assigning photographic form to the court's genealogical claims (Hyde Nolan, 2019). The ethnographic dimension of the larger Yıldız Palace collection constitutes an act of imperial categorization. The empire's multi-confessional, multi-lingual populations were rendered as types, i.e., classified, fixed, and made retrievable within a photographic database whose organizational logic paralleled the contemporary anthropological tradition of typological photography.

Deringil (1998) has demonstrated that Abdülhamid II's legitimation strategy operated through a sophisticated system of invented symbols, ceremonial practices, and documentary production aimed simultaneously at internal consolidation and external credibility. The photographic project belongs to this broader apparatus of symbolic governance. But photography introduced a distinctive feature that other documentary and ceremonial forms did not possess, the appearance of automatic indexical inscription. If state documents, official seals, and ceremonial architecture all required acts of authorized human production, photographs appeared to document reality directly. Their epistemic authority derived precisely from the fiction of the camera's impartiality, a fiction that the Albums systematically deployed by representing modernity-in-progress as a natural property of Ottoman territory rather than a carefully selected subset of it.

This selection is the Albums' crucial epistemological operation. As Sheehi (2016) observes, the Hamidian collection "provided assurances to class and political allies... during a time of political upheaval and repression" (p. 23). The Albums did not document a stable empire. They produced the visual fiction of one. The taxonomic subject categories such as schools, hospitals, military academies and factories were not representative samples of Ottoman reality; on the contrary, they were the categories through which a particular version of the empire was made visible while everything that did not conform to this version was rendered photographically invisible. As Richards (1993) has argued, in the context of the British imperial archive, that the fantasy of the imperial archive is precisely the fantasy of complete knowledge, namely, the empire imagined as a fully documented, fully legible entity. The Hamidian Albums participate in this fantasy while simultaneously structuring its limits. The archive is always an archive of what was chosen to be included, and those choices constitute the political operation that representational analysis alone cannot reveal.

The Logic of Photographic Exclusion

Section 2 of this article theorized categorical violence as harm that emerges not from individual acts of discrimination but from the classificatory operations of governance systems themselves, from the categories deployed, the subjects they include, and the subjects they cannot accommodate. The Hamidian Albums provide a historical instantiation of this mechanism that is, in certain respects, more legible than its contemporary algorithmic counterparts precisely because the historical distance allows us to identify what was at stake in its categorical operations.

The Albums' taxonomic logic produced a structurally constitutive exclusion. The empire's non-Muslim minorities, its poor, its zones of conflict, and its ongoing wars appear nowhere in the gift collection sent to the Library of Congress and the British Library. The Albums were compiled and dispatched precisely during one of the most tumultuous periods of Ottoman history. The photographic archive that was being assembled at Yıldız Palace during these years contains, however, no documentation of this upheaval. This is not incidental. The categorical logic of the photographic project, specifically, its organization around modernization, progress, institutional development, and civilizational achievement, structurally excluded the visual evidence that would have undermined the diplomatic purpose of the Albums. The category of 'Ottoman progress' could not accommodate the category of 'Ottoman conflict and confusion' within the same taxonomic system. The categorical violence was not merely hidden; it was rendered categorically unavailable to the visual apparatus that the Albums constituted.

The categorical exclusion operated not only on populations and events but on spaces and practices.

Figure 1a: Dariüşsafaka, Istanbul. Abdullah Frères, c. 1880–1893. An Ottoman school for orphans, photographed for the Gift Albums' educational facilities category.



Source: <https://search.catalog.loc.gov/instances/a3f0d68e-b696-5a58-a84e-3078a7cb1da5>

Figure 1b: "Vue rue à Stamboul" (Street view in Istanbul). Abdullah Frères, c. 1880–1893. A residential street in the historic peninsula, with overhanging wooden balconies, latticed windows, cobblestones, and neighbourhood inhabitants in informal daily life.



Source: https://rosettaapp.getty.edu/delivery/DeliveryManagerServlet?dp_s_pid=IE2902364

In Figure 1a, the image enacts the Albums' taxonomic logic, which is institutional modernity rendered as photographic evidence of civilisational competence, with students, built infrastructure, and architectural order arranged for administrative legibility. This is what the classificatory system *included*. On the other hand, Figure 1b, produced by the same studio, during the same period, using the same photographic apparatus as Figure 1a, represents the lived texture of Ottoman urban space that the Albums' taxonomic categories could not accommodate. The narrow street, the wooden domestic architecture, the woman in traditional dress, and the small-scale commercial activity all belonged to the category of Ottoman life that Western visual discourse coded as 'Oriental', precisely the visual material the Albums were assembled to contest. The categorical violence is visible in the juxtaposition, not in what either image shows individually, but in the classificatory system that admitted one and excluded the other.

The coffeehouses, bazaars, narrow streets, artisanal workshops, and sites of informal sociability that constituted the lived texture of Ottoman urban life are absent from the Albums not because they were beneath notice but because they were categorically incompatible with the taxonomic frame. Makdisi (2002) has argued that the Ottoman modernization project involved a form of 'Ottoman Orientalism', a distinction between what he identifies as "a degraded Oriental self — embodied in the unreformed pre-modern subjects and landscape of the empire" and a modernized Ottoman self-defined by institutional reform (p. 770). The Albums' taxonomic categories of schools, hospitals, factories, military academies and railway stations constitute the visual grammar of this modernized self. Conversely, the spaces of pre-modern sociability such as the coffeehouse (*kahvehane*), the covered bazaar, the narrow residential street (*sokak*), the itinerant vendor and the neighbourhood dervish lodge (*tekke*) belonged to the category of Ottoman life that the Albums' classificatory logic was designed to supersede. These were the spaces that, in Çelik's (1992) framing, Western visual discourse had long coded as markers of Oriental stagnation, the picturesque disorder of the 'Eastern street' that European photographers and painters reproduced as evidence of civilizational difference. The Hamidian photographic apparatus excluded these spaces not because they were unknown to the palace but because their inclusion would have confirmed the very Orientalist narrative the Albums were assembled to contest. The paradox is instructive. To resist Western Orientalism photographically, the Ottoman Empire internalized its visual categories, rendering the spaces that did not conform to the modernization taxonomy invisible through the same logic of classificatory exclusion that Western imperial photography deployed from the outside. This is not propaganda in the conventional sense as in the deliberate hiding of unfavourable truths, but something more structural, a categorical system in which certain spaces are not hidden but simply cannot be generated as photographic subjects. In Bowker and Star's (1999) terms, these spaces occupied the position of "residual categories", the classificatory remainder that the system acknowledges only through its absence, the category of what does not fit (pp. 299). The coffeehouse was not censored from the Albums; it was unthinkable within them.

Figures 2a and 2b above make this exclusion logic visually concrete. Both images were produced by the same studio, Abdullah Frères, the firm that served as one of the six photographic agents of the Hamidian apparatus, during the same period, using the same photographic technology. However, the first image entered the Albums but the second could not, not because the studio lacked access to these spaces, but because the taxonomic frame had no category capable of generating them as photographic subjects. The same apparatus that produced images of schools, hospitals, and military academies for the Albums simultaneously produced images of narrow streets and neighbourhood life for the European commercial market. The categorical violence lies not in the photographer's choice but in the classificatory system that determined which outputs were admissible as evidence of Ottoman modernity and which were structurally inadmissible. Abdullah Frères could see both Istanbuls. The Albums' taxonomy saw only one.

The categorical exclusion extends to the photographic representation of minority communities within the Albums themselves. The *Elbise-i Osmaniyye* tradition of ethnographic type photography classified minority subjects through the visual shorthand of costume. Armenians, Greeks, Jews, and Kurds were made legible as their difference, reduced to sartorial markers that fixed their identity within the taxonomy (Hyde Nolan, 2019). This is a classic operation of the misalignment between a biographical subject and the categorical slot assigned to that subject (Bowker & Star, 1999). The Hamidian photographic system could accommodate Ottoman minorities as ethnographic types, namely, costume-wearing instances of classified difference, but not as subjects whose social complexity, historical specificity, or political claims exceeded what the typological category could contain. The category flattened its subjects, and the flattening was a form of power.

There is a further categorical violence in the Albums' treatment of collective authorship. The six commercial firms and military photographers who produced the images are, in the final organizational logic of the Albums, invisible. The images circulate without individual attribution; they bear no signature but the institutional one of the palace. This erasure of individual photographic agency reveals the Albums' fundamental orientation. They are not documents of individual photographic vision but outputs of a classificatory machine. The subjects photographed had no agency over their representation. The photographers had limited agency over their framing; only the institutional logic of the taxonomic project determined what appeared, in what categories, and in what sequence. This is the grammatical structure of categorical violence, harm that emerges not from the intention of any individual actor but from the organizational logic of the system within which all actors operate.

Asymmetrical Legibility and the Sovereign Gaze

What the Hamidian Albums reveal, when read through the conceptual framework developed in Section 2, is that the algorithmic image's defining features, specifically, classification before representation, operational legibility over aesthetic communication, asymmetric visibility, categorical exclusion, and collective authorship subordinated to institutional logic, were not invented by machine learning but inherited from a longer genealogy of visual governance. Yet the most structurally significant feature of the Hamidian photographic system remains to be examined: its constitutive asymmetry. The sultan who commissioned and organised this comprehensive visual database of imperial territory, populations, and institutions systematically refused to submit his own image to photographic capture. The empire was rendered maximally legible; the sovereign gaze remained opaque. This asymmetry, the power to classify without being classified, to render visible without being seen, is not a biographical curiosity but the structural logic that connects the Hamidian apparatus most directly to contemporary algorithmic governance. Section 4 examines this asymmetry in detail, tracing its operation across the outward-facing diplomatic apparatus, the inward-facing policing infrastructure, and the theoretical implications of the invisible sovereign as a structural precursor to the invisible algorithm.

A final observation about the Albums' categorical operations clarifies what is at stake. The Library of Congress's documentation notes that the Albums were buried in the Orientalia Division upon arrival in 1893, uncatalogued and unseen (Hyde Nolan, 2019). Yet the systematic exclusions built into their organisational logic persisted in the absence of any audience at all. The categorical operations of the Albums did not require viewers to function. They were executed at the moment of classification, at the moment of selection, at the moment the photographic subjects were assigned to their respective categories within the imperial taxonomy. The violence, in other words, was structural and temporal, not contingent on reception but constituted in production. The protocols of the Hamidian photographic project, including its subject-based taxonomic organisation, its multi-agent distributed production, its systematic exclusions, and its asymmetric legibility structures, constitute a proto-infrastructure image system, one that produced effects through classification rather than through representation, and one whose harm operated not through individual photographic decisions but through the categories that organised those decisions in advance.

ASYMMETRICAL LEGIBILITY AND THE SOVEREIGN WHO SEES BUT IS NOT SEEN

The preceding analysis of the Abdülhamid Gift Albums has focused primarily on their outward face including their taxonomic architecture, their exclusionary logic, and the categorical violence they enacted in constituting the empire as a legible modernity for Western diplomatic audiences. But a full account of the Hamidian photographic apparatus requires more than naming this asymmetry; it requires tracing how a second, inward-facing dimension operated simultaneously with the diplomatic Albums and through the same photographic infrastructure. The sultan who assembled 36,535 images of his empire for the purposes of governance and propaganda refused, with extraordinary consistency, to submit his own image to photographic capture. This asymmetry of maximum visibility imposed on subjects versus absolute opacity maintained by the sovereign is not incidental to the Hamidian photographic project but constitutive of it. It names the structural logic that makes the project politically significant beyond its immediate historical context, and it is this logic that most directly anticipates the power geometry of contemporary algorithmic governance.

The Outward Apparatus of Albums as Diplomatic Performance

The Albums dispatched to Washington and London in 1893 and 1894 represented the public, outward-facing dimension of Abdülhamid II's photographic strategy. As Sections 3.1 and 3.2 established, these Albums functioned as a form of visual diplomacy, a state-controlled system for projecting a particular image of Ottoman modernity to audiences whose political perceptions directly affected the empire's diplomatic standing and territorial integrity. The backdrop was the sustained European discourse of Ottoman decline, crystallized in William Gladstone's pamphlet campaigns of the 1870s and 1880s condemning Ottoman governance and fuelling calls for intervention on behalf of Christian minorities. Against this discursive threat, the Albums constituted a systematic counterargument organized not through written text but through photographic evidence: schools, hospitals, military academies, bridges, harbors, and factories arranged into taxonomic categories that collectively argued for Ottoman civilizational competence (Deringil, 1998; Gülaçtı, 2018).

The strategic calculation embedded in this choice of medium was explicit. Photographs carried epistemic authority that no diplomatic memorandum could match. Their apparent automaticity and their claim to direct indexical inscription of reality, allowed the albums to present their carefully curated selection of imperial institutions not as argument but as documentation. The selection was, of course, a profound act of political curation through the systematic exclusion of everything that might undermine the modernization narrative. Yet the photographic medium naturalized this curation as transparent documentation. The outward apparatus deployed photography's representational authority precisely to perform an operation that was, at its core, infrastructural rather than representational, the management of Western perceptions through the strategic organization of visual evidence.

The Inward Apparatus of Photography as Policing Infrastructure

What the scholarly focus on the Albums has tended to obscure is the simultaneous existence of a second, inward-facing photographic apparatus that operated through the same technical and institutional infrastructure but served a fundamentally different purpose, which is the surveillance, identification, and administrative control of populations within the empire's boundaries. The photographic project assembled under Abdülhamid II was never exclusively a diplomatic undertaking. It was, from the outset, a dual-use infrastructure whose two functions, outward propaganda and inward surveillance, were structurally connected rather than incidentally parallel.

The most documented instance of inward surveillance photography is the systematic photographing of prisoners in Istanbul's jails, initiated under Abdülhamid II's personal orders (Gülaçtı, 2018, p. 199). This order mobilized photography not as evidence of modernity to be presented to foreign audiences but as a tool of administrative identification, the creation of a visual record of the incarcerated that would enable police distribution and recognition across the imperial administrative apparatus. The operational logic here is strikingly different from that of the Albums. Where the Albums produced images for outward projection, the prison photography produced images for internal circulation through photographs as administrative files, as instruments of the state's capacity to identify, track, and manage individuals who had come under its coercive authority. Yılmaz's (2019) analysis of Ottoman police photography and anthropometry during the Hamidian era demonstrates that the use of photographs in security files extended well beyond prisons to include images of crime scenes, suspects, killed revolutionaries, and damaged buildings in the aftermath of political violence, a systematic visual documentation of the state's encounters with its internal threats. The photographic infrastructure assembled under Abdülhamid II served the police apparatus as readily as it served the diplomatic one.

Territorial documentation constituted a third register of inward surveillance, closely related to the prison photography in its administrative orientation. The Yıldız Palace collection of 36,535 images included not only the institutions featured in the Albums but systematic visual documentation of the empire's provinces, its archaeological sites, and its ethnographic populations, a comprehensive visual inventory of imperial territory that served as what Scott (1998) would call a legibility project, the reduction of complex social and geographical realities to administratively manageable representations. The ethnographic albums documenting minority populations in costume, analyzed in Section 3.2, were part of this inward inventory as much as they were instruments of outward representation. They produced populations as known, classified, and retrievable within an administrative visual system, a form of governance through enumeration that preceded any specific act of surveillance or punishment.

The 1888 Prison Photography Order and Infrastructure's Dual Use

The specificity of the prison photography order warrants sustained attention because it illuminates the dual-use character of photographic infrastructure with unusual clarity. When Abdülhamid II ordered the systematic photographing of prisoners in Istanbul's jails for police distribution, he was not initiating a new technological practice but extending an existing photographic infrastructure, the same studios, the same technical apparatus, the same institutional apparatus of commission and collection, to a new administrative function (Gülaçtı, 2018, p. 199). The commercial photographic firms that produced images of schools and military installations for the gift albums were operating within the same broader ecosystem of imperial photography that also produced identification images for the police apparatus.

This dual use is what distinguishes photographic infrastructure from photographic representation. A representational account of the Hamidian photographic project might draw a sharp distinction between the diplomatic albums and the police photography: the former as propaganda, the latter as surveillance. An infrastructural analysis, by contrast, recognizes them as different outputs of the same system, which are different queries addressed to the same database, different uses of the same classificatory apparatus. The photographs of schools and factories constituted the empire as modern and governable for Western audiences; however, the photographs of prisoners constituted individual subjects as identified, classified, and administratively retrievable for the police apparatus. In both cases, the fundamental operation was the same: the conversion of persons and places into classifiable, storable, and retrievable visual data.

The parallel with contemporary photographic infrastructure is not metaphorical. A facial recognition system deployed by a state security apparatus performs precisely this dual-use function. The same technical infrastructure that enables commercial verification also enables suspect identification; the same algorithmic classification system that sorts consumers into marketing categories also sorts populations into security risk profiles (Browne, 2015; Lyon, 2003). The Hamidian case demonstrates that this dual use is not a feature of digital technology but of classificatory visual infrastructure as such.

The Invisible Sovereign and the Invisible Algorithm

The structural asymmetry at the heart of the Hamidian photographic apparatus is its most theoretically significant feature. Abdülhamid II famously refused to be photographed after ascending the throne in 1876. European and American newspapers wishing to publish his image were limited to three photographs taken before his accession, reproduced and recirculated until his deposition in 1909 (Özendes, 1998). The sultan's own articulation of photography's political power, "Every picture is an idea — a picture can inspire political and emotional meanings which cannot be conveyed by an article of a hundred pages; therefore, I benefit greatly from photographic rather than written records" (Rıza Tahsin, 1991, p. 355-356), makes clear that this refusal was not a personal and principled objection to photography but a calculated exercise of sovereign prerogative. He who understood photography's power most clearly was also he who most assiduously refused to submit to it.

The asymmetry this produces is precise and structurally significant. The sultan assembled 36,535 images of his subjects while remaining photographically opaque to them. His subjects including military personnel, students, workers, prisoners and ethnic minorities rendered as costume-wearing types were made maximally legible by the photographic apparatus that their sovereign controlled. The sovereign who designed and directed that apparatus remained invisible within it. He saw without being seen. He classified without being classified. He constituted the empire as a visual totality while exempting himself from the totalizing gaze.

Scott's (1998) analysis of state legibility illuminates one dimension of this asymmetry, specifically, the modern state's aspiration to render populations legible to administrative governance while the mechanisms and agents of governance remain opaque to those populations. Those who classify always know more about the classified

than the classified knows about the classifying operation. But the Hamidian case adds a dimension that Scott's (1998) framework, focused on administrative rationality rather than sovereign power, does not fully capture. The sultan's refusal of photography was not merely a practical measure but a performance of sovereignty, a demonstration that the exemption from classification is itself a form of power. To be unclassifiable, i.e., to exist outside the taxonomic system that renders others legible, is to occupy the position of the classifier rather than the classified. Sovereignty, in the photographic register, consisted precisely in this asymmetry: the power to see without being seen, to know without being known, to classify without being classifiable.

Pasquale (2015) has described contemporary digital infrastructure in strikingly similar terms. The "black box society" he analyzes is one in which individuals are "tracked ever more closely by firms and government" while having "no clear idea of just how far this information can travel, how it is used" (p. 3). The companies and state agencies that operate algorithmic classification systems, accumulating detailed behavioral profiles of users, customers, and subjects, conduct this accumulation with minimal transparency about their own operations, their classificatory criteria, or the consequences of the categories they deploy. The algorithm that classifies is itself unclassified and the system that renders populations legible remains, to those populations, opaque. The structural geometry is identical to the Hamidian photographic apparatus: maximum legibility imposed downward, maximum opacity maintained upward.

The genealogical claim here is not that contemporary technology companies deliberately emulated Ottoman imperial practice. It is that the asymmetric structure of visual governance, the one-way mirror that makes subjects visible while keeping sovereign and algorithmic power invisible, is not an invention of digital capitalism but a recurrent feature of classificatory visual infrastructure, one whose earliest systematic instantiation in the Ottoman case reveals the political logic that continues to animate its contemporary manifestations. The invisible algorithm inherits its structural position from the invisible sovereign.

A methodological clarification is necessary here, because it determines the evidentiary standard for the argument that follows. There is a difference between structural analogy and genealogical prefiguration, and the distinction matters for what this article claims. Structural analogy observes that two systems share a common geometry, in this case, the one-way mirror of asymmetric legibility, and draws theoretical insight from the comparison. This is a legitimate and productive operation, but it does not require historical connection between the compared systems; one could observe the same asymmetric structure in the Panopticon, in the Hamidian photographic apparatus, and in contemporary algorithmic governance without claiming any institutional link between them. Genealogical prefiguration makes a stronger claim: that the later system inherits specific institutional practices, administrative categories, or infrastructural logic from the earlier one, not through conscious imitation but through the persistence of bureaucratic and technical structures across regime changes. The distinction between these two modes of argument is what separates this article's intervention from the existing literature on surveillance and photography, which has frequently observed structural similarities between historical and contemporary visual governance but has not traced the institutional mechanisms through which classificatory practices are transmitted.

The Sultan's Database: Two Strands of Ottoman Visual Governance and Their Computational Convergence

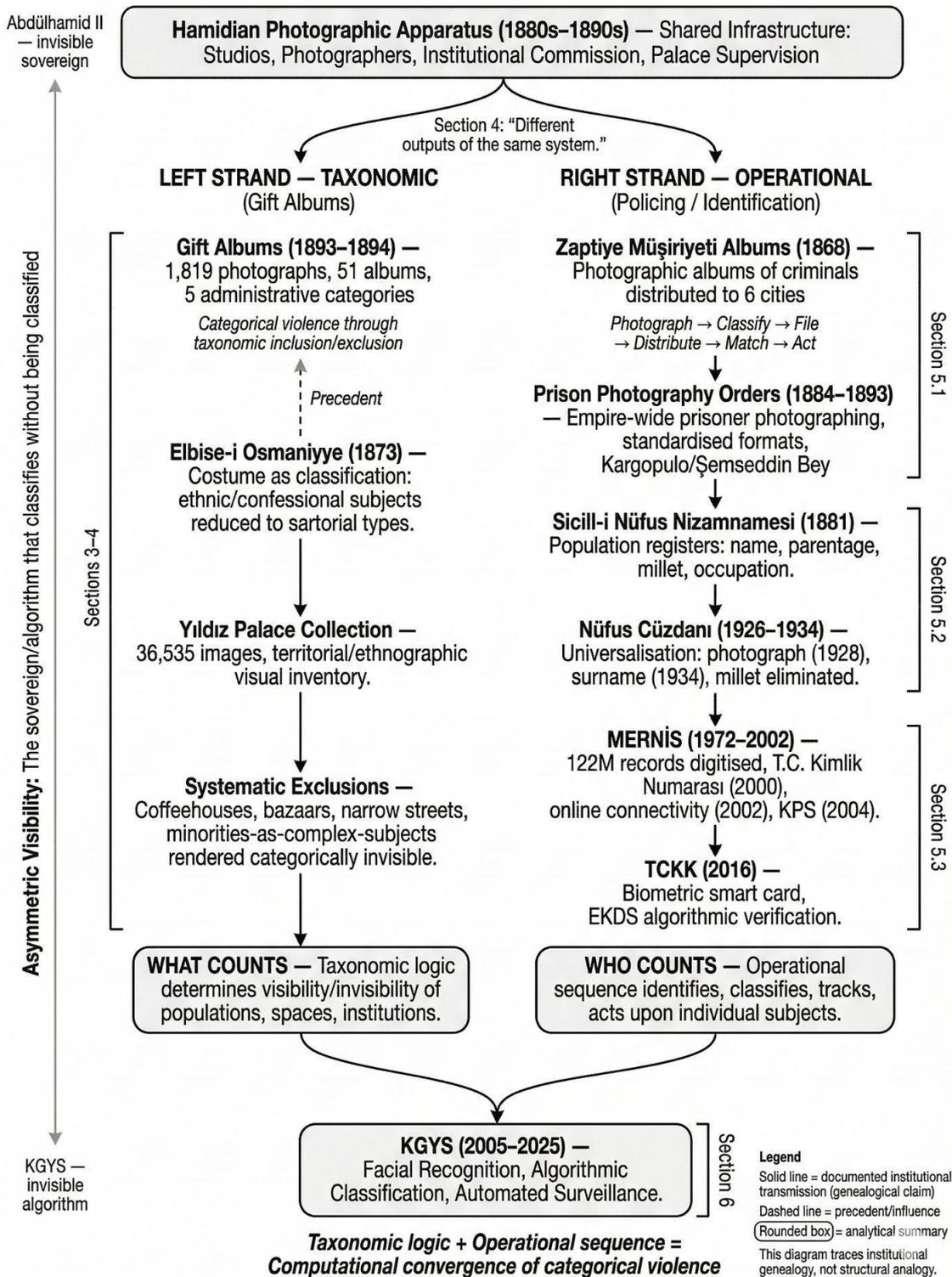


Figure 2: Two strands of Ottoman visual governance and their computational convergence. **Source:** By Author

The left strand traces the taxonomic logic of the Gift Albums, classificatory categories that determined the visibility and invisibility of populations, spaces, and institutions. The right strand traces the operational sequence of the policing and identification apparatus, photograph, classify, file, distribute, match, act, from the Ottoman Police Directorate's criminal albums (1868) through the Republican nüfus cüzdanı and MERNİS to the biometric identity card. Both strands originate in the shared photographic infrastructure of the Hamidian period (1880s–1890s) and converge computationally in KGYS (2005–2025), where facial recognition cameras simultaneously execute the taxonomic logic (algorithmic categories determine who is visible and who is not)

and the operational sequence (automated identification, classification, and action). The vertical arrow at left indicates the persistence of asymmetric visibility, namely the classifying authority that remains opaque to the classified population, from the invisible sovereign to the invisible algorithm. Solid lines indicate documented institutional transmission; dashed lines indicate precedent.

INSTITUTIONAL GENEALOGY FROM THE ZAPTIYE ALBUMS TO THE BIOMETRIC STATE (1868–2016)

The preceding sections have established the Abdülhamid Gift Albums as a proto-infrastructure image system whose classificatory logic enacted categorical violence through taxonomic inclusion, typological flattening, and systematic exclusion. If this analysis is to make a genealogical rather than merely metaphorical claim, that is, if the operational logic identified in the albums persists not as an analogy but as an institutional and infrastructural inheritance, then the question becomes one of transmission. Through what specific mechanisms, institutions, and material practices did the Ottoman visual classification apparatus survive the collapse of empire, the Republican revolution, and the transition to digital governance? This section traces that transmission across four phases: the Ottoman policing infrastructure that operated alongside the albums (1868–1908), the Republican identification apparatus that inherited and universalised Ottoman categorical structures (1923–1970s), the computational turn that digitised the population register (MERNİS, 1970s–2000s), and the contemporary urban surveillance system (KGYS/MOBESE, 2001–present) that returns the infrastructural image to its operational function.

Sections 5 and 6 undertake this tracing for the specific case of Turkey. Section 5 follows the chain from the Ottoman Police Directorate's photographic albums (1868) and the Hamidian prison photography order through the Republican-era identity documentation reforms of the 1920s and 1930s to the digitisation of population registration with MERNİS and the biometric identity card (1972–2016), establishing the persistence of classificatory categories across regime changes. Section 6 turns to the contemporary apparatus, examining how the deployment of facial recognition within KGYS completes the genealogical chain by adding automated real-time visual capture to the accumulated digital identification infrastructure, and how the 2025 use of AI-powered surveillance against protesters demonstrates the return of asymmetric visibility in computational form. If the genealogical claim can be substantiated, if the classificatory categories of Ottoman visual governance can be shown to have persisted through institutional and infrastructural transmission rather than to have been independently reinvented, then the theoretical consequences for surveillance studies are significant, because the field's standard genealogy, running from Bentham through Foucault to contemporary digital systems, would need to be revised to accommodate a parallel and partially independent lineage of taxonomic visual governance with Ottoman roots.

Figure 2 above maps the structure of this genealogical argument. The diagram distinguishes two strands of visual governance that originated within the shared photographic infrastructure of the Hamidian period, as documented in the preceding sections: a taxonomic strand, in which the Gift Albums' five-category classificatory system determined which populations and spaces were rendered visible and which were consigned to categorical invisibility, and an operational strand, in which the policing and identification apparatus established the sequence of photographing, classifying, filing, distributing, matching, and acting upon individual subjects. The two strands operated in parallel under Abdülhamid II, sharing photographers, institutional channels, and classificatory logic while serving different sovereign purposes, i.e., outward legibility and inward control. The sections that follow trace each strand's institutional transmission across regime changes and media transformations, demonstrating that both persist not as structural analogies but as documented genealogical inheritances. Section 5 follows the operational strand from the Zaptiye albums through the Republican identification apparatus to MERNİS and the biometric identity card. Section 6 demonstrates that KGYS is the point at which the two strands converge into a single computational infrastructure, executing both the taxonomic logic of categorical visibility and the operational sequence of automated identification simultaneously and at algorithmic speed.

The Ottoman Policing Apparatus as Parallel Infrastructure (1868–1908)

The Gift Albums were not the only photographic classification system operating under Abdülhamid II. Alongside the albums' representational taxonomy of imperial modernity, the Ottoman state simultaneously constructed a criminal identification infrastructure that used photography for explicitly operational purposes such as tracking, distribution, recidivism prevention, and, critically, ethno-religious targeting. Çolak's (2015) archival research demonstrates that this parallel apparatus emerged as early as 1868, under Sultan Abdülaziz, when the Ottoman Police Directorate (*Zaptiye Müşiriyeti*) created photographic albums of pickpockets and thieves, recording their photographs alongside their names and offences. The immediate operational logic was

recidivism prevention as convicted criminals were being exiled to their home provinces after serving their sentences, only to return to major cities and recommit the same offences. The Police Directorate's response was to photograph, classify, reproduce, and distribute. Copies of the criminal albums were sent to İskenderiye, İzmir, Selanik, Beyrut, and Trabzon so that the same individuals could be identified and apprehended across the empire's urban network (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-d, İ.DH. 572/39898; Karakışla, 1999, p. 44–45; Sarıyıldız, 2008, pp. 185–186). This is, in structural terms, the same operational sequence that Sekula (1986) identifies in the Western Bertillonage system, namely, photograph, classify, file, distribute, match, but operating independently in an Ottoman institutional context two decades before Alphonse Bertillon's system was formally adopted in Paris in 1882 (National Library of Medicine, n.d.).

The apparatus intensified under Abdülhamid II. In April 1884, the Sultan tasked Hersekli Kâmil Bey, the Minister of Police Forces (*Zaptiye Nazırı*), with establishing a photographic studio within the police directorate building itself (Çolak, 2015). All prisoners in Istanbul's General Penitentiary (*Hapishane-i Umumi*) were to be photographed, their images compiled into criminal files (*sabıka dosyaları*) and distributed to every police station in the capital. The management of this studio was assigned to Vasilaki Kargopulo, Abdülhamid's personal court photographer, the same Sultan's Chief Photographer (*Serfotoğrafi-i Hazret-i Şehriyârî*) whose commercial studio served the palace's representational needs (The Oriental Advertiser, 1884). The convergence is significant. The photographer who produced images for the Sultan's representational apparatus simultaneously operated the apparatus of criminal identification. The two systems, the albums that classified the empire's modern institutions and the criminal files that classified its deviant subjects, shared not merely an operational logic but, in Kargopulo, the same photographic agent.

On 13 August 1887, Abdülhamid II issued an imperial order (*irade*) through the Ministry of Police Forces (*Zaptiye Nezareti*) requiring the photographing of all prisoners sentenced to death or life imprisonment across every province of the empire (Çolak, 2015). The order was simultaneously communicated to provincial authorities and to the Ministry of Justice (*Adliye Nezareti*) for Istanbul's prisoners. The resulting operation was extensive. Stelios Konstantinidis, a Greek photographer operating in Galata, was contracted to photograph 289 prisoners in Istanbul's General Penitentiary, producing first carte-de-visite format (6×10 cm, three copies each) and then, on a second order, cabinet portrait format (10×13 cm, two copies each), a total of approximately 1,445 photographs, at a cost of 8,595 cents (*kuruş*) to the state (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-e, İ.DH. 1081-84840). The resulting albums, now held in the IRCICA Yıldız Collection (nos. 91285, 91290, 91291, 91292, 91293), record each prisoner's name, offence, and sentence beneath a standardised full-body photograph. Without exception, the prisoners' hands, particularly their right hands, are prominently displayed. Some prisoners rest their hands on a table; others place them on their laps, palms down; and in the most distinctive cases, prisoners pose with their right hand pressed against their chest, fingers spread and clearly visible (Çolak, 2015).

This last detail, the mandatory visibility of hands, is not a neutral photographic convention. It is a direct consequence of Abdülhamid II's personal engagement with criminological literature. Atif Hüseyin Bey, the Sultan's personal physician after 1909, recorded Abdülhamid's own explanation. The Sultan had read the Turkish translation of an English criminological text claiming that in most murderers, the tip of the thumb extended beyond the middle joint of the index finger, and that criminal hands resembled the claws of a wild animal. He then ordered the photographing of every violent criminal in the empire's prisons specifically to test this thesis and reported that the thumb observation held true in most cases (Hülagu, 2003). This is not anecdotal trivia. It reveals that the Ottoman criminal photographic apparatus was informed by, and consciously modelled on, the same pseudo-scientific discourse of criminal typology that animated Cesare Lombroso's *L'Uomo Delinquente* (1876) and Francis Galton's composite photography experiments of the 1880s. The Ottoman state was not merely borrowing European photographic technology. It was participating in the same epistemic regime that understood photography as a classificatory instrument capable of rendering criminal identity legible through somatic markers. The operational logic is identical to the logic of the Gift Albums' costume-type tradition. The individual biography is categorically irrelevant; only the typological marker, the thumb ratio, the sartorial sign, the institutional category, matters.

The 1891 order concerning Armenian prisoners reveals a more explicitly violent dimension of this apparatus. Abdülhamid II instructed Hüseyin Nazım Paşa, Minister of Police Forces, to have Armenian prisoners photographed specifically by Muslim photographers, under conditions of secrecy. The operation was not to leak beyond the institutional chain of command. Two government clerks somewhat skilled in photography, Baha Bey and Küçük Mazhar Efendi, were assigned to work day and night in the General Penitentiary to complete the task. Both were subsequently rewarded with rank promotions for their service (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-g, Y.MTV. 47-163). The secrecy requirement and the explicit

stipulation of Muslim photographers indicate that this was not merely a continuation of the general criminal identification programme. It was an ethno-religiously targeted operation within the photographic apparatus, a moment when the classification system was utilized along the very Ottoman millet lines that the Gift Albums' taxonomy naturalised as benign administrative categories. This operation suggests that the photographic identification of Armenian prisoners was part of a broader apparatus of surveillance and control.

By 1892–1893, the apparatus had scaled to an empire-wide operation. The Grand Vizierate (*Sadaret*), Interior Ministry (*Dahiliye Nezareti*), and Ministry of Police Forces conducted extensive correspondence to standardise the photographing of prisoners across all provinces. The standardisation extended beyond photography to the prisoners themselves: as discussions addressed the design of uniform prisoner clothing with different-coloured fronts and backs to prevent exchange, serial numbers embroidered on sleeves, and the assignment of Police Commissioner Mehmed Şemseddin Bey, one of the first Ottoman police photographers, to oversee the operation from the Beyoğlu Province Photography (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-b, DH.MKT. 2017-74). Şemseddin Bey prepared detailed cost estimates for establishing photographic studios in every provincial prison, including specifications for equipment, chemicals, and standardised print formats. The projected cost for photographing and uniforming all prisoners across the empire's approximately 30 provincial and 85 *liva* centre prisons, housing an estimated 29,000 inmates, was calculated at 34,000 liras (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-c, DH.MKT. 2047-110). Budget constraints delayed full implementation, but the institutional intention is unmistakable. The Ottoman state apparatus sought to construct a photographically integrated identification system spanning every prison in the empire, with standardised formats, centralised collection, and distributed circulation.

The institutional persistence of this apparatus is equally significant. The Beyoğlu Province Photography (*Beyoğlu Mutasarrıflık Fotoğrafhanesi*), established in 1891 with Police Commissioner Şemseddin Bey as its photographer, was expanded in 1896 and 1898 with additional rooms and improved facilities (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-f, İ.ZB. 2-1316 S-01). After the 1908 revolution and the abolition of the Ministry of Police Forces, the same physical space and the same institutional function continued under a new name, namely, the Beyoğlu Polis Müdüriyeti Fotoğrafhanesi (Çolak, 2015). After Şemseddin Bey's dismissal in 1909, Ömer Hulusi Bey took over as photographic officer in 1910 (Cumhurbaşkanlığı Devlet Arşivleri, n.d.-a, DH.EUM.THR. 240-81). The regime changed; however, the photographic identification infrastructure persisted. This is not metaphorical continuity. It is the same building, the same equipment, and the same operational function of photographing, classifying, filing and distributing, surviving a revolution that otherwise dismantled the Hamidian security apparatus. In Khalili's (2020) terms, the infrastructure outlasted the sovereignty that built it.

Two parallel systems thus operated simultaneously under Abdülhamid II: the Gift Albums, which classified the empire's modern institutions, spaces, and subject populations into a visual database of Ottoman progress; and the criminal-policing apparatus, which classified the empire's deviant, dangerous, and, in the 1891 Armenian case, politically suspect subjects into an operational database of state control. The two systems shared a common classificatory logic in the form of taxonomic inscription beneath the photograph: institution/crime, location/sentence, ethnic type/offence category, common material formats of carte-de-visite and cabinet portrait, common institutional actors such as Kargopulo operating in both, and a common operational sequence of photographing, classifying, reproducing, distributing and identifying. The Gift Albums were the empire's visual database of what it wished to be while the criminal photographic apparatus was its visual database of what it wished to control. Together, they constituted a comprehensive proto-infrastructure image system in which photography operated not as representation but as governance.

Republican Continuity From Population Registry System to Identity Document (1923–1970s)

The Republican revolution of 1923 dismantled the Hamidian political order: the sultanate, the caliphate, the millet-based administrative structure, the imperial court and its photographic apparatus. What it did not dismantle was the population registration infrastructure. The Population Registry System (*Sicill-i Nüfus*), established by the 1881 Population Registry Regulation (*Sicill-i Nüfus Nizamnamesi*) under Abdülhamid II and maintained through permanent population registers (*nüfus kütükleri*) at the province (*kaza*) level, survived the transition to Republican governance as the institutional foundation of the new state's identification apparatus. The Ottoman memorandum, namely personal identity records or *tezkire*, formally the Ottoman Empire Memorandum (*Devleti Aliyye-i Osmaniyye Tezkiresi*), had recorded the bearer's name, father's name, mother's name, *millet* (ethno-religious community), occupation, eye colour, and height (Nüfus ve Vatandaşlık İşleri Genel Müdürlüğü [NVİ], n.d.). The Republican identity document (*nüfus cüzdanı*), introduced in 1926 in booklet form, inherited this categorical structure almost intact. ie., name, father's name, mother's name, birthplace, birth date, and, critically, the categorical field that had previously registered *millet* (NVİ, n.d. -a).

The continuity was not merely formal. The same provincial population registration offices (*nüfus müdürlükleri*) that had maintained Ottoman population registers continued to operate under Republican authority, staffed in many cases by the same clerks using the same registration practices. As Karpat's (1985) research on the Ottoman census system demonstrates, the population registration apparatus that the Republic inherited was already a sophisticated bureaucratic infrastructure with standardised forms, centralised reporting, and district-level permanence, not a rudimentary system requiring wholesale replacement.

The Republican state's categorical innovations operated not by replacing this inherited infrastructure but by modifying specific axes within it. The most significant categorical subtraction was the elimination of the *millet* classification. Where the Ottoman memorandum had registered ethno-religious community as a primary identity marker, and where the Population Registry System had maintained separate registers for each recognised *millet*, with standardised forms differentiated by the bearer's stated religion (Shaw, 1978), the Republican identification document formally replaced this axis with the universal category of Turkish citizenship. The elimination was not a simple erasure; it was a recategorisation that performed its own form of categorical violence. The multi-confessional, multi-ethnic taxonomy of the Ottoman system, which had at least registered difference even as it hierarchised it, was replaced by a taxonomy of national homogeneity that rendered ethnic and religious difference invisible within the official identification apparatus. Populations that the Ottoman system had classified as distinct such as Armenian, Greek, Jewish, Kurdish and Arab were subsumed under a single categorical identity. This is not the absence of classification but its intensification as the category of Turkish citizenship performed more categorical work than any single Ottoman *millet* designation, precisely because it denied the classificatory distinctions it superseded.

Two categorical additions transformed the inherited apparatus in ways that are structurally significant for the genealogical argument. The first was the introduction of photographs on the national identity document in 1928 (*Nüfus ve Vatandaşlık İşleri Genel Müdürlüğü* [NVİ], n.d.). This requirement universalised the photographic identification apparatus that had previously been applied selectively to criminal suspects (from 1868), to prisoners (from 1887), and to ethno-religiously targeted populations (the 1891 Armenian prisoner photographs). Where the Ottoman state had used photography as a classificatory instrument for specific populations such as the dangerous, the deviant and the politically suspect, the Republican state extended the same operational logic to the entire citizen body. Every Turkish citizen was now photographically inscribed within the identification apparatus. The operational sequence documented in Section 5.1, namely, photograph, classify, file, distribute, match, was no longer restricted to the policing infrastructure. It became the universal condition of citizenship. The photograph on the national identity document was not a portrait. On the contrary, it was an operational image, an element within an identification database, whose function was not representation but verification. In this sense, 1928 marks the moment when the photographic identification apparatus built under Abdülhamid II achieved full population coverage, not through a new invention but through the universalisation of an existing infrastructural logic.

The second categorical addition was the 1934 Surname Law (*Soyadı Kanunu*), which required every Turkish citizen to adopt a fixed, hereditary surname. Before 1934, Ottoman and early Republican subjects were identified by given names, patronymics, and informal designations, which was a system that, as Scott (1998) argues, was locally legible but resisted centralised administrative processing. The Surname Law imposed a new categorical axis, the fixed, state-registered family name, onto the existing identification infrastructure. As Türköz (2018) demonstrates, the law was not merely an administrative convenience but a nation-building instrument that simultaneously fixed individual identity within a patrilineal transmission system and suppressed markers of ethnic, religious, or regional origin that non-Turkish surnames might carry. Kurdish, Armenian, Arabic, and other non-Turkish naming conventions were replaced with Turkish-language surnames, many chosen from state-approved lists. The Surname Law thus added a categorical axis that performed double duty. It enhanced the state's capacity for individual identification, which is the same function as the photograph, while simultaneously reinforcing the categorical homogenisation inaugurated by the elimination of the *millet* designation. The population register now contained a photograph, fixed surname, given name, parentage, birthplace and birth date, which is a combinatory identification matrix that would persist, with only minor modifications, through every subsequent format change until its digitisation as MERNİS.

Table 1: Persistence and Modification of Categorical Fields Across Turkish Identification Formations (1881–2016)

Categorical Field	Sicill-i Nüfus (1881) Population Registry	Ottoman Tezkire (pre-1923) Identity Memorandum	Nüfus Cüzdanı Booklet (1926–1976)	Nüfus Cüzdanı Single Page (1976–2016)	MERNİS Database (2000–present)	TCKK Smart Card (2016–present)
Name (given)	• <i>İsim</i>	• <i>İsim</i>	• <i>Ad</i>	• <i>Ad</i>	• <i>Ad</i>	• <i>Ad</i>
Father's name	• <i>Baba adı</i>	• <i>Baba adı</i>	• <i>Baba adı</i>	• <i>Baba adı</i>	• <i>Baba adı</i>	• <i>Baba adı</i>
Mother's name	• <i>Ana adı</i>	• <i>Ana adı</i>	• <i>Ana adı</i>	• <i>Ana adı</i>	• <i>Ana adı</i>	• <i>Ana adı</i>
Millet (ethno-religious community)	• <i>Separate registers per community</i>	• <i>Millet designation</i>	× ELIMINATED <i>Replaced by universal Turkish citizenship</i>	—	—	—
Occupation	• <i>Meslek / San'at</i>	• <i>Meslek / San'at</i>	—	—	—	—
Physical description	—	• <i>Eye colour, height</i>	—	—	—	—
Birthplace	• <i>Doğum yeri</i>	• <i>Doğum yeri</i>	• <i>Doğum yeri</i>	• <i>Doğum yeri</i>	• <i>Doğum yeri</i>	• <i>Doğum yeri</i>
Birth date	—	• <i>Doğum tarihi</i>	• <i>Doğum tarihi</i>	• <i>Doğum tarihi</i>	• <i>Doğum tarihi</i>	• <i>Doğum tarihi</i>
Photograph	—	—	• INTRODUCED <i>Added 1928 — universalised from policing apparatus</i>	• <i>Standardised format</i>	• <i>Digital image file</i>	• <i>Biometric template — algorithmically processable</i>
Surname (fixed, hereditary)	—	—	• INTRODUCED <i>Added 1934 — Soyadı Kanunu</i>	• <i>Soyadı</i>	• <i>Soyadı</i>	• <i>Soyadı</i>
T.C. Kimlik Numarası	—	—	—	—	• INTRODUCED <i>Assigned 28 Oct 2000 — 11-dijit, bilgi içermeyen</i>	• <i>Primary identifier</i>
Residential address (verified)	—	—	—	—	• INTRODUCED <i>AKS — Adres Kayıt Sistemi</i>	• <i>Linked to identity record</i>
Biometric data (fingerprints)	—	—	—	—	—	• INTRODUCED <i>For citizens over 15 — EKDS verification</i>
Machine-readable chip	—	—	—	—	—	• INTRODUCED <i>Contact + contactless, ICAO-compliant, TÜBİTAK OS</i>

• = field present • INTRODUCED = field added in this formation × ELIMINATED = field actively removed — = field absent

Source: By author

The persistence of core fields (name, parentage, birthplace) across all six formations, spanning 135 years, three regime types, and four media substrates, constitutes the empirical basis for the genealogical claim.

Core categorical fields such as name, parentage and birthplace persist across all six formations without modification, spanning the Ottoman population registry, the Republican identity document in both formats, the MERNİS digital database, and the biometric smart card. The elimination of the millet designation in 1926 (Row 4) and the introduction of the photograph in 1928 (Row 9) and the fixed surname in 1934 (Row 10) represent the Republican state's categorical modifications to the inherited Ottoman structure: the substitution of national homogeneity for ethno-religious classification, and the universalisation of photographic identification from the policing apparatus to the entire citizen body. The computational turn (Columns 5–6) adds new categorical axes such as the TR Identity Number (T.C. Kimlik Numarası), verified residential address, biometric data, and machine-readable chip, without altering the inherited core fields. The table demonstrates that MERNİS digitised rather than replaced the categorical structure accumulated since 1881, and that the TCKK compresses the entire genealogical inheritance into a single polycarbonate object. Sources: NVİ (n.d.-a; n.d.-b), Karpat (1985), Shaw (1978), Türköz (2018).

Table 1 above displays the categorical fields present in each successive identification formation, from the 1881 Population Registry Regulation through the TR Identity Card, smart card of 2016. Three observations are analytically significant. First, the core fields of name, parentage, and birthplace persist across all six formations without modification, an unbroken categorical inheritance spanning 135 years, three regime types (imperial, republican, post-liberal), and four media substrates (paper register, paper document, electronic database, biometric chip). These fields constitute the minimal categorical unit of Turkish state legibility, the irreducible set of data that the state has required of every subject and citizen since the population registration apparatus was standardized in 1881. Second, the Republican modifications are visible as categorical operations on the inherited structure rather than replacements of it: the millet field is actively eliminated (Row 4), the photograph is added from the policing apparatus (Row 9), and the fixed surname is imposed as a new axis of legibility (Row 10). Each modification performs specific political work such as national homogenisation, universal photographic inscription and patrilineal fixation but none disrupts the underlying relational architecture of the register. Third, the computational turn of MERNİS and the TR Identity Card (Columns 5–6) adds entirely new categorical axes such as the TR Identity Number, the verified residential address, biometric fingerprint data, and machine-readable chip technology, while preserving every core field intact. The table makes visible what the prose argument of this section has claimed: that MERNİS digitised the categorical structure that had been accumulating since 1881, rendering it computationally operable without altering its classificatory logic. The fields changed medium, from ink on paper to data in a relational database to biometric template on a polycarbonate chip, but the categories persisted.

By 1976, when the national identity document was compressed from a booklet to a single-page document, the categorical structure was fully consolidated (NVİ, n.d. -a). The format changed; however, the fields did not. The same identification matrix of photographic image, fixed surname, given name, parentage, birthplace and birth date continued to constitute the minimal categorical unit of Turkish citizenship. As Bowker and Star (1999) claims, what the Republican state had built between 1926 and 1934 was a classification system with the two properties most essential to infrastructural persistence. It was embedded in social practices to the point of invisibility, and it was learned as part of membership in a community of practice. Every Turkish citizen encountered the national identity document at birth, carried it throughout life, and produced it for every significant interaction with the state such as marriage, military service, property registration and travel. The identification apparatus was no longer an instrument applied to specific populations, but it was the categorical condition of social existence. This is the Republican contribution to the genealogical chain, the universalisation and normalisation of a classificatory infrastructure whose operational logic was developed under Ottoman sovereignty, whose photographic dimension was built for policing and criminal identification, and whose categorical structure, despite the formal rupture of 1923, persisted across the regime change with its fundamental operational sequence intact.

From Analog to Digital via MERNİS and the Computational Turn (1972–2016)

Section 5.2 concluded with a consolidated identification matrix, consisting of photographic image, fixed surname, given name, parentage, birthplace and birth date, embedded in social practice through the national identity document and maintained by district-level population registration offices across the Republic's administrative geography. By 1976, the format had been compressed to a single page, but the categorical structure was fully mature. What had not changed since the 1881 Population Registry Regulation was the material substrate of the system, paper. Population records were maintained in bound volumes of population registries at the district level, with no centralized database, no unique numerical identifier, and no capacity for real-time inter-institutional query. A citizen registered in Diyarbakır but moved to Istanbul could not be identified, verified, or processed by Istanbul's population registration office without a physical request to the

originating district. The identification apparatus was categorically sophisticated but operationally constrained by its material infrastructure. The classificatory logic that had accumulated since the Ottoman population registries remained locked within locally held paper registers.

The computational turn was legislatively initiated before the analog format had even stabilised. Population Law No. 1587, the *Nüfus Kanunu* of 5 May 1972, gave birth to the idea of the Central Population Administration System (*Merkezi Nüfus İdaresi Sistemi*), MERNİS (Nüfus Kanunu, 1972). Four years before the national identity document was compressed from booklet to single page, the Turkish state had already begun planning the digitisation of the population register. The project was developed by the State Planning Organisation (*Devlet Planlama Teşkilatı*) in 1976, contracted to the Middle East Technical University (METU) in 1980, and entered implementation studies in 1982, a decade-long gestation that reflects both the ambition of the project and the material constraints of computing infrastructure in a developing state during the Cold War period (NVI, n.d.-b). The project stalled between 1982 and 1996, reviving only when the World Bank incorporated MERNİS into its Privatisation and Social Safety Net programme, allocating \$5.5 million in credit (NVI, n.d.-b). The World Bank's rationale was explicit. Unique identification numbers for every citizen would improve tax collection efficiency and strengthen the social security system (NVI, n.d.-b). MERNİS was not conceived solely as a technical modernisation of the population register. It was embedded from the outset in a global programme of neoliberal restructuring in which the computational legibility of populations was understood as a precondition for fiscal governance. The identification apparatus that the Ottoman state had built for administrative control and the Republican state had universalised for national homogenisation was now being digitised under the auspices of international financial institutions for the purposes of economic management. The classificatory logic persisted while the sovereign rationale shifted.

Between 1997 and 1999, the accumulated paper-based population records were transferred to digital format. The scale of this migration is significant: 122,145,860 person records, both living and deceased, were entered into the electronic system by existing population registries personnel across 922 district offices (NVI, n.d.-b). The number is worth pausing on. It means that the entire genealogical depth of the population register was digitised, not merely the current citizenry but the full historical accumulation of births, deaths, marriages, and migrations recorded since the Republican registers inherited the Ottoman population registries. Every entry that a district clerk had inscribed by hand into a bound volume, the same volumes that descended, through institutional transmission, from the Population Registry Regulation of 1881, was now rendered computationally searchable. The dead were digitised alongside the living. The genealogical chain was not merely preserved in the transition from paper to database. It was deepened, because the computational system could now traverse relational links such as parent to child, spouse to spouse and sibling to sibling that had existed in the paper registers but could only be followed manually, one volume at a time. MERNİS, in the NVI's own terminology, digitised *Ahvali Şahsiye*, civil status information, using a term that descends directly from Ottoman administrative vocabulary (NVI, n.d.-b). The terminological persistence is not incidental. It signals that the institution understood itself as digitising an existing system, not creating a new one.

The genealogical claim is therefore precise. MERNİS did not invent a new identification system. It rendered computationally operable the one that had been accumulating since 1881, through the Republican identity document, through the photograph requirement of 1928, through the Surname Law of 1934, through seven decades of continuous civil registration at the district level. The categorical structure of name, surname, parentage, birthplace, birth date and photograph was transposed from paper to database with its relational architecture intact. Every field in the MERNİS database corresponds to a field on the identity card, which corresponds to a field on the Ottoman memorandum, which corresponds to a field in the 1881 population registry. The medium changed from paper to electronic storage; however, the classificatory schema persisted.

But MERNİS did more than digitise. It introduced three innovations that transformed the operational capacity of the identification apparatus in ways that its categorical structure alone could not have achieved. The first and most consequential was the TR Identity Number, the eleven-digit unique identification number assigned to every citizen registered in the population registries. The number was assigned to all existing population records on 28 October 2000, a date whose symbolic resonance with the founding of the national identification apparatus is unlikely to be coincidental (NVI, n.d.-b). The NVI's own description is analytically precise. The TR Identity Number is an eleven-digit number containing no information, with the last two digits serving as check digits for verification (NVI, n.d.-b). This formulation is critical. Before MERNİS, citizens were identified by the combinatorial intersection of their categorical fields such as name, surname, father's name, birthplace and birth date. This combination was sufficient for local identification but computationally intractable at scale as homonymy, transcription errors, and incomplete records made reliable cross-referencing between districts, let alone between institutions, structurally impossible. The TR Identity Number solved this

by assigning each citizen a permanent, unique, algorithmically generated numerical identifier that persisted from birth to death and across every institutional interaction. In database terms, it was a primary key, the single field that made every other field in the record computationally addressable. In Scott's (1998) terms, it completed the legibility project that the Ottoman population registry had initiated. Where the 1881 system had made populations locally legible to district-level administrators, the TR Identity Number made every individual citizen computationally legible to every institution in the state apparatus simultaneously. The number itself, an eleven-digit number containing no information, carried no ethnicity, no religion, no birthplace, no gender. But it enabled the instantaneous retrieval of all descriptive content associated with the individual. It was, in Haggerty and Ericson's (2000, p. 611) terms, the node around which the "surveillant assemblage" crystallised, namely, the single identifier that allowed previously discrete data flows such as population records, tax records, military service records, health records and criminal records, to be integrated into a unified informational profile of the individual citizen. By 2002, 560 public institutions had received T.C. Kimlik Numarası transfers for the persons in their own databases, and approximately 58 million citizens had learned their numbers through various channels (NVI, n.d.-b). The number was not merely assigned. It was disseminated into every institutional capillary of the state.

The second innovation was online connectivity. The national network, whose construction began in January 2002 and was completed by the end of that year, established real-time electronic connections between all 922 district population offices and the central database (NVI, n.d.-b). Pilot operations began in Ankara and Kırıkkale provinces in April 2002, expanding to full national coverage within months. This eliminated the geographic constraint that had defined population registration since the Ottoman period. A citizen could now receive population services from any population office in the country, regardless of their registration location since the postal correspondence and paperwork between districts, as the NVI noted, was entirely eliminated (NVI, n.d.-b). The operational consequence was the transformation of the identification apparatus from a distributed archive of thousands of locally held paper registers, each accessible only at its physical location, into a single, centrally held, universally accessible database. In infrastructural terms, MERNİS accomplished what the 1892–93 Ottoman prison photography campaign had attempted but could not achieve at scale, a system in which every identification record was simultaneously accessible from every node in the administrative network. The 1868 Ministry of Police Forces albums had been physically copied and distributed to six cities whereas MERNİS made the entire population register queryable from 922 offices in real time.

The third innovation extended the database beyond the population registration system itself. The Identity Sharing System (Kimlik Paylaşım Sistemi, KPS), was tendered on 9 June 2004 and became operational in December of that year, opening the MERNİS database to authorised queries from other state institutions and, under regulated conditions, from private-sector actors (NVI, n.d.-b). Where the national identity document had been a document that the citizen carried and presented, a physical token of identity that mediated between the individual and the state, the KPS made the population database directly accessible to institutions without the citizen's physical mediation. A bank, a hospital, a court, a military recruitment office, and a law enforcement agency could verify a citizen's identity by querying the TR Identity Number against the MERNİS database. The NVI document is explicit about the security dimension. Security forces could access a person's MERNİS record through a computer terminal by entering their TR Identity Number or name and surname, enabling identity verification and the detection of fake identities (NVI, n.d.-b). This is not a peripheral function. It is the direct computational successor to the operational logic documented in Section 5.1. Where the 1868 Ottoman Police Directorate had distributed photographic albums to police stations in İskenderiye, İzmir, and Selanik so that criminals could be identified and apprehended across the empire's urban network, the KPS distributed the entire population database to security terminals across the country so that any individual could be identified, verified, and, if flagged, apprehended through a database query. The medium changed from silver gelatin to database record, but the operational sequence of identification query, matching and action persisted intact.

The identification apparatus no longer depended on the citizen's possession of a document. It just depended on the citizen's existence as a record within a computationally accessible database. The national identity card persisted as a physical object, but its operational function had been displaced as it was now a pointer to the database record, not the record itself. In Bowker and Star's (1999) terms, the classification system had achieved full infrastructural maturity. It had become so thoroughly embedded in institutional practice that it was invisible to the very institutions it enabled. Every institutional transaction that required identity verification such as opening a bank account, registering for school, filing a tax return, purchasing a SIM card and appearing in court was now mediated by a single, centralised database whose categorical structure descended, through unbroken institutional transmission, from the Ottoman population registry.

The Address Registration System (Adres Kayıt Sistemi, AKS) added a further categorical axis by linking every citizen's MERNİS record to a verified residential address. This completed the identification matrix by adding real-time spatial location to the existing fields of name, parentage, birthplace, and biometric photograph. The state could now query not only *who* a citizen was but *where* a citizen was, or at least where the state's records placed them. Combined with the TR Identity Number, AKS transformed the population register from an identification system into a locational one. Every citizen was simultaneously classifiable by identity and addressable by location.

The culmination of this computational turn was the TR Identity Card (Türkiye Cumhuriyeti Kimlik Kartı), launched on 14 March 2016 in Kırıkkale, the same province that had served as pilot for MERNİS's online operations fourteen years earlier, and rolled out nationally from 2 January 2017 (NVI, n.d.-a). The TR Identity Card replaced the former paper identity document with a polycarbonate smart card containing both contact and contactless chips, designed to ICAO international standards, incorporating a national operating system developed by TÜBİTAK (NVI, n.d.-a). The card stores the citizen's population data, photograph, and, for those over fifteen, biometric data including fingerprints (NVI, n.d.-a). The photograph on the TR Identity Card is no longer a photograph in any traditional sense. It is a biometric template, a computationally processable data point within an algorithmic verification system. When a TR Identity Card is read by an authorised terminal, the photograph is not viewed by a human clerk comparing it to a face. It is processed by an Electronic Identity Verification System (Elektronik Kimlik Doğrulama Sistemi) that matches the biometric data on the chip against the biometric data stored in the central database. The operational sequence is identical to the one documented in Section 5.1, which is photograph, classify, file, distribute, match, but every step has been computationally automated. The clerk who once compared a prisoner's face to a carte-de-visite in a police album has been replaced by an algorithm that compares a biometric template against a database record. The operational logic persists. Yet the human intermediary has been eliminated.

The TR Identity Card thus represents the convergence of every strand in the genealogical chain. Its categorical structure of name, surname, parentage, birthplace, birth date and TR Identity Number descends directly from the Ottoman memorandum through the Republican paper identity document. Its photographic-biometric dimension universalises and automates the identification logic that the 1868 Ministry of Police Forces albums initiated and that the 1928 photograph requirement extended to the entire population. Its computational infrastructure composed of MERNİS, KPS, AKS and EKDS digitises and renders interoperable the classificatory apparatus that the Population Registry Regulation of 1881 first standardised. Moreover, its smart-card form factor, ICAO-compliant and machine-readable, incorporates a design that draws explicitly on Seljuk lines, Ottoman motifs, and Republican modernist aesthetics (NVI, n.d.-a) and positions the Turkish identification apparatus simultaneously within a global infrastructure of computational identity verification and within a national narrative of civilisational continuity. The TR Identity Card is not a new invention. It is the material condensation of a genealogical inheritance of Ottoman, Republican, analog, digital aspects compressed into a polycarbonate card that every Turkish citizen is legally required to carry.

THE AUTOMATED GAZE VIA KGYS AND THE RETURN OF ASYMMETRIC VISIBILITY (2005–2025)

Section 5.3 concluded with a fully digital identification infrastructure, a centralised population database (MERNİS), a universal numerical identifier (TR Identity Number), an inter-institutional sharing system (KPS), an address registry (AKS), biometric smart cards (TR Identity Card), and a security query interface (GBT) through which law enforcement could instantaneously retrieve any citizen's identity, criminal history, and residential location by entering their identity number into a terminal. What this infrastructure lacked was a visual capture layer, a system capable of seeing citizens in urban space, in real time, without requiring the physical mediation of an identity document or a police stop. The City Security Management System, or KGYS (Kent Güvenlik Yönetim Sistemi), supplies that layer. It completes the genealogical chain by adding automated visual surveillance to the digital identification apparatus that had been accumulating since the Ottoman population registry. With KGYS, the state no longer needs to stop a citizen, request their identity card, and manually query their identity number. The camera sees; the algorithm identifies; the database responds. The entire operational sequence that this article has traced, namely photograph, classify, file, distribute, match, act, is now executed computationally, without human intermediary, at the speed of network transmission.

The institutional genealogy of urban visual surveillance in Turkey is shorter than that of population registration but follows the same pattern of incremental accumulation. The foundations were laid in Istanbul in June 1996, when analogue cameras were installed in the Harbiye–Maçka valley for the Habitat II United Nations Conference, transmitting footage to a central monitoring station via fibre-optic cables and recording

on cassette (Kula & Güler, 2016). In 2004, the same valley was outfitted with 160 analogue cameras across forty locations for the seventeenth NATO summit, this time using digital MPEG4 encoding and network infrastructure provided by Türk Telekom (Kula & Güler, 2016). The first city-wide deployment came in 2005, when Istanbul's Mobile Electronic System Integration, or MOBESE (Mobil Elektronik Sistem Entegrasyonu), was launched, initially with 570 cameras designed for twenty-four-hour monitoring of streets, intersections, and public spaces (Bozbeyoğlu, 2012). MOBESE was not a camera system alone. It integrated seven subsystems from the outset including fixed and mobile cameras, an automatic licence plate recognition system (PTS), traffic monitoring, GPS-based vehicle tracking for patrol units, a call management system, and, crucially, a direct connection to PolNet, the Turkish National Police's internal computer network (Yalcinkaya, 2007). PolNet, operational since the late 1990s, combined databases of criminal records, vehicle registrations, wanted persons, terrorist and organised crime files, fingerprint archives, weapon ballistics, and DNA records into a single secure intranet accessible from every police station, airport, and border gate in the country (Yalcinkaya, 2007; Şahin & Breen, 2009). MOBESE was integrated into PolNet as a named module, meaning that visual surveillance data captured by urban cameras could be cross-referenced against the police database in the same interface (Yalcinkaya, 2007). The camera did not merely record; it was networked into the identification apparatus.

The system expanded rapidly. By 2010, there were approximately four thousand government cameras at one thousand locations in Istanbul alone; by 2014, the number in Istanbul exceeded five thousand, with 1,331 in Ankara and 221 in İzmir (Erdem, 2016). After 2011, the system was renamed from MOBESE to KGYS, though the earlier acronym persisted in public usage (Bozbeyoğlu, 2012). The renaming signalled a conceptual shift from a mobile electronic integration system, which was a technical description of hardware interoperability, to a *security management system*, a designation that positioned the apparatus as an instrument of urban governance rather than a mere surveillance network. Each successive city deployment added integrative complexity. The Antalya KGYS (2007) unified emergency services such as ambulance, fire brigade, police and gendarmerie into a single command centre and introduced geographic information systems capable of automatically locating callers requesting emergency assistance (EEC, n.d.). The Ankara KGYS (2009) developed an upper-layer software interface that for the first time managed all subsystems of cameras, traffic enforcement, call management, GBT queries and geographic information through a single platform, operable from over one hundred terminals across the city (EEC, n.d.). The software was developed by HAVELSAN, a subsidiary of the Turkish Armed Forces Foundation, positioning the civilian urban surveillance apparatus within the institutional orbit of the defence industry (HAVELSAN, n.d.).

The analytical point here is not the number of cameras. It is the integration. KGYS does not operate as a standalone visual surveillance system. It is networked into the entire digital identification infrastructure that Sections 5.2 and 5.3 have documented. When a KGYS camera captures a vehicle licence plate, the PTS (Plaka Tanıma Sistemi) automatically queries the plate against PolNet's vehicle database, which is linked to the owner's TR Identity Number, which is linked to their MERNİS population record, which contains their photograph, parentage, birthplace, and, through AKS, their residential address. When a police officer stops a citizen and conducts a GBT (Genel Bilgi Toplama) security query, the routine identity check that takes place at checkpoints, airports, stadiums, and public squares across the country. They enter the citizen's TR Identity Number into the system and receive, within seconds, their complete security profile: criminal record, outstanding arrest warrants, travel bans, terror organisation affiliations, military service status (Kadim Hukuk, 2026; Akbulut Legal, 2026). The GBT system is jointly operated by the used jointly by the Coast Guard, the Police Department, the Gendarmerie, and the Customs Directorate, all under the Ministry of Interior, i.e., every branch of the security apparatus, and its records are classified as Restricted, maintained under the Smuggling Intelligence, Operations, Information Gathering (KİHBİ) directive and unpublished in the Resmi Gazete (Kadim Hukuk, 2026; Akbulut Legal, 2026). The citizen whose TR Identity Number is queried does not know what the system returns; the classificatory act, the moment of sorting an individual into categories of risk, suspicion, or clearance, is invisible to the classified subject. The asymmetry is structural.

This asymmetry deepens decisively with the introduction of facial recognition. In September 2024, Turkey's General Directorate of Security initiated a major expansion of AI-powered biometric surveillance, purchasing 3,500 facial recognition cameras, 200 network switches, and 278 servers for deployment across thirty provinces at a cost of 73.2 million Turkish liras (Gostoli, 2025). The consequences became empirically visible within weeks. Police reports submitted as court evidence started to show over people captured by surveillance cameras, each tagged with their name and TR Identity Number above their image in the photograph, the same pairing of portrait and classificatory data that the 1868 Ministry of Police Forces albums had established, now generated automatically by algorithmic matching (Gostoli, 2025).

The genealogical argument can now be stated in its complete form. This article has traced two parallel strands of visual governance originating in the Hamidian period, strands that Section 4 identified as different outputs of the same classificatory infrastructure. The first strand is taxonomic as the Gift Albums' five-category system that determined which populations, institutions, and spaces deserved visibility and which were consigned to categorical invisibility, namely the coffeehouse rendered unthinkable, the minority subject flattened into a costume-type, the zones of conflict and poverty structurally excluded from the frame of Ottoman modernity. This strand enacted categorical violence through classification itself, through the taxonomic logic that decided what counted as evidence of civilisational competence and what was erased as evidence of backwardness. The second strand is operational through the Ministry of Police Force's photographic albums of the 1860s, the prison photography orders of the 1880s, the 1881 Population Registry Regulation's standardised population registers, the Republican identity document's universalisation of photographic identification after 1928, MERNİS's digitisation of the accumulated classificatory apparatus after 1997, and the GBT security query system that made every citizen's identity, criminal record, and residential address retrievable through a single numerical identifier. This strand enacted governance through the operational sequence documented across Sections 5.1 through 5.3: photograph, classify, file, distribute, match, act.

KGYS is where the two strands converge computationally. When a facial recognition camera captures a face and matches it against a biometric database, it executes the operational sequence of the policing strand, the same identify-classify-file-match-act chain that the 1868 the Ministry of Police Force's albums initiated and that MERNİS rendered computationally instantaneous. But KGYS does more than identify. It sorts. Its algorithmic processes such as the facial recognition models, the matching thresholds, the risk classifications and the database query categories determine which faces are flagged and which pass unregistered, which individuals become hypervisible to the security apparatus, and which remain invisible within it. The categories deployed by the system determine who is captured and who is not, whose photograph is tagged with name and TR Identity Number and forwarded to a prosecutor's file, and whose presence in the same crowd at the same moment generates no record at all. This is the taxonomic logic of the Gift Albums operating at computational scale. The Albums determined what counted as evidence of Ottoman modernity and KGYS determines who counts as a security risk. The Albums rendered the coffeehouse categorically invisible because the taxonomic frame could not accommodate it and KGYS renders the off-duty officer categorically invisible because the query set does not target them. In both cases, the violence lies not in any individual image but in the classificatory system that organises which images are produced, retained, and acted upon, and which are never generated at all. The harm is categorical. It flows from the categories themselves, from their inclusions and their exclusions, from the taxonomic logic that sorts the visible from the invisible before any human decision is made.

The convergence extends to the structure of asymmetric visibility that defines both strands from their origin. Sultan Abdülhamid II's photographic apparatus, as Sections 3 and 4 documented, was constituted by a double asymmetry. In the taxonomic strand, the Albums rendered the empire maximally legible to Western audiences while the sovereign who orchestrated the visual field remained invisible within it, the absent centre who saw without being seen, who classified without being classified. In the operational strand, the prison photography and the criminal identification apparatus rendered deviant and suspect populations legible to the police while the classificatory criteria, the institutional logic, and the political motivations that determined who was photographed remained opaque to those photographed. KGYS reproduces both asymmetries simultaneously. The citizen walking through any of Turkey's surveilled public spaces is captured by cameras whose algorithmic processes including the facial recognition models, the matching thresholds, the database queries and the risk classifications are invisible to them. They do not know if they have been identified. They do not know what categorical determination has been made. They do not know if their TR Identity Number has been queried, if their GBT record has been flagged, if their AKS address has been forwarded to an operational unit. The classificatory act occurs in what Pasquale (2015, p. 3) terms "a system whose workings are mysterious; we can observe its inputs and outputs, but we cannot tell how one becomes the other." And simultaneously, the taxonomic frame that determines *which categories are deployed*, specifically what counts as a security threat, what constitutes suspicious presence, what distinguishes a protester from a bystander in the algorithmic classification, remains as opaque to the classified population as the Gift Albums' five-category structure was to the populations it sorted into visibility and invisibility. The sovereign gaze has not been democratised by its digitisation; it has been automated and rendered even more asymmetric. Abdülhamid II's invisible sovereignty, mediated through the photographic apparatus of the 1880s and 1890s, finds its computational successor in the algorithmic black box of KGYS, a system that can scan, query, classify, and act upon any citizen within its visual field, enacting both the operational violence of the policing apparatus and the categorical violence of the

taxonomic apparatus, but now at the speed of computation, at the scale of the entire urban population, and without the mediating presence of a human classifier.

The two strands that had operated in parallel under Abdülhamid II, the Gift Albums that classified the empire's modern face and the policing apparatus that classified its deviant subjects, are no longer parallel. They have merged into a single computational infrastructure. The categorical violence has not ended. It has been infrastructuralised.

CONCLUSION AND GENEALOGY AGAINST ANALOGY

This article has traced a single operational sequence, specifically photograph, classify, file, distribute, match, act, across five distinct institutional formations: the Ottoman Police Directorate's photographic albums of the 1860s, the Population Registry Regulation's population registers of 1881, the Republican identity document's universalisation of photographic identification after 1928, MERNİS's digitisation of the accumulated classificatory apparatus after 1997, and KGYS's deployment of facial recognition-enabled urban surveillance in the 2020s. At every stage, the medium changed, from wet-plate collodion to paper booklet to electronic database to algorithmic camera, but the operational logic persisted. A sovereign authority renders a population visually legible, classifies that visual data within an administrative taxonomy, archives it for retrieval, and uses the resulting record to govern. The Gift Albums that Abdülhamid II dispatched to the Library of Congress and the British Museum enacted the same categorical logic, sorting the empire into five administrative axes of visibility and invisibility, that KGYS enacts when a facial recognition camera captures a protester, matches the biometric template against a MERNİS record, and forwards the tagged photograph, annotated with name and TR Identity Number, to a prosecutor's file. The categories have changed. The violence of categorisation has not.

The analysis developed in Sections 3 and 4 established that the Gift Albums operated not as photographic collections in any conventional sense but as a visual database structured by administrative taxonomy, a proto-infrastructural image system in which photographs functioned as classified, retrievable, sequentially numbered entries within a governance apparatus rather than as representational objects. The Albums' five-category structure rendered the empire administratively legible by determining which institutions, spaces, and populations deserved photographic visibility such as schools, hospitals, military academies, factories and panoramic urban views and which were consigned to categorical invisibility such as coffeehouses, bazaars, narrow residential streets, minority subjects whose social complexity exceeded the typological slot of the costume-type. This finding has consequences beyond the Ottoman case. It demonstrates that the condition now theorised as the infrastructural image, the photograph operating as data within computational systems of classification and governance (Gülaçtı, 2025), was not inaugurated by digital technology but was already operative in a nineteenth-century imperial photographic project that organised visual material according to database logic before the database existed. The Hamidian apparatus classified before it represented, sorted before it showed, and governed through its taxonomic categories rather than through the content of any individual image. What contemporary algorithmic systems have added is not the infrastructural condition itself but the speed, scale, and opacity of its execution.

The argument is genealogical, not analogical. This distinction carries methodological weight that extends beyond the Turkish case. An analogy would observe that Ottoman photographic albums and contemporary facial recognition systems share structural similarities as they both classify, sort, render populations legible to power and would use the historical case as an illustrative parallel for the contemporary one. A genealogy makes a stronger and more falsifiable claim: that the contemporary system descends from the historical one through documented institutional transmission, that the classificatory categories of the later system were inherited (not independently invented) from the earlier one, and that the institutional actors who built the later system operated within structures such as the population directorates, the population registers and the identity document format that were themselves inherited from their Ottoman predecessors. The evidence presented in Sections 5 and 6 supports the genealogical claim. The fields on the MERNİS database correspond to the fields on the Republican identity document, which correspond to the fields on the Ottoman memorandum, which correspond to the fields in the 1881 Population Registry Regulation's population registers. The NVİ itself describes MERNİS as digitising *Ahvali Şahsiye*, Ottoman administrative terminology for civil status, signalling an institutional self-understanding of continuity, not rupture. The 122 million records migrated to the digital database between 1997 and 1999 included the full genealogical depth of the population register, living and dead, accumulated since the Republican state inherited the Ottoman population registries. The TR Identity Number did not create a new identification logic; on the contrary, it completed one that the Population Registry Regulation had initiated in 1881 by making every citizen computationally addressable within a classificatory schema whose categorical structure had been accumulating for over a century.

The genealogical method also reveals something that analogy cannot, the persistence of asymmetric visibility across regime changes. Abdülhamid II commissioned the Gift Albums and the Yıldız Palace photograph collection, ordered the photographic cataloguing of prisoners, and oversaw the implementation of the population registries yet never appeared in the visual field he orchestrated. The sovereign who saw was not seen. The populations, territories, and institutions rendered legible in the albums had no reciprocal capacity to inspect the classificatory system that determined their visibility or invisibility. This asymmetry was not a personal idiosyncrasy of the sultan's political style. It was a structural feature of the apparatus itself, and it persists, in computational form, in the algorithmic black box of KGYS. The citizen captured by a facial recognition camera in 2025 does not know what classificatory determination has been made, what risk category has been assigned, what database has been queried, or what threshold has been crossed. The categorical act, the moment of sorting, is invisible to the sorted subject. The genealogical chain does not merely connect Ottoman photography to digital surveillance through a shared operational logic. It connects them through a shared structure of epistemic asymmetry in which the classifying authority remains opaque to the classified population. Tracing this asymmetry as a continuous institutional inheritance, rather than observing it as a coincidental resemblance, is what genealogy enables and analogy cannot.

This genealogy intervenes in a disciplinary blind spot. Surveillance studies' dominant periodisation runs Bentham's Panopticon (1787) through Foucault's theorisation of disciplinary power (1975) to the digital panopticon of contemporary platform capitalism and algorithmic governance (Zuboff, 2019; Haggerty & Ericson, 2000). The genealogy is overwhelmingly Western European and North American: the prison, the clinic, the factory, the school, the shopping mall, the social media platform. When non-Western cases appear, they typically arrive as recipients or adaptations of surveillance technologies developed elsewhere, as instances of diffusion rather than as independent genealogies. The Ottoman case disrupts this periodisation on empirical grounds. Abdülhamid II's photographic apparatus of the 1880s and 1890s was not an importation of Benthamite logic. It was not panoptic in Foucault's sense as it did not aim to make subjects internalise surveillance through the awareness of being perpetually visible. It was taxonomic as it aimed to render populations and territories administratively legible through systematic visual classification, producing not docile bodies but readable categories. The distinction matters theoretically. Ottoman visual governance operated through categorical ordering, sorting populations into administrative taxa of visibility and invisibility, rather than through disciplinary normalisation. The Gift Albums did not discipline their subjects. They classified them. Population registries did not produce self-policing citizens. It produced computationally addressable records. The violence was not in the gaze's disciplinary effect on the individual but in the category's constitutive power over the population, determining who was visible and who was not, who was legible and who was illegible, who counted as a subject of governance and who fell outside the taxonomic frame. This is what this article has called categorical violence, and it operates through a logic that the Bentham–Foucault lineage does not adequately theorise.

Inserting the Ottoman genealogy into surveillance studies therefore does more than add a non-Western case to an existing framework. It reframes the framework itself by demonstrating that the visual-administrative logic now associated with algorithmic governance of taxonomic classification, asymmetric legibility, infrastructural embeddedness and inter-institutional data sharing were independently developed within a non-Western imperial context, using photographic technology, before the twentieth century. The algorithmic systems that currently classify, sort, and act upon populations at computational speed are not unprecedented in their logic. They are unprecedented in their speed, scale, and opacity. The categorical violence is older than the algorithm. It is older than the digital. It is rooted in the visual-administrative practices of empires that understood, long before the invention of the database, that to photograph is to classify, and to classify is to govern.

This has consequences not only for how we theorise surveillance but for how we periodise it. If the genealogy of algorithmic governance runs not only through Bentham and Foucault but through Ottoman population registers, Abdülhamid II's Gift Albums, Republican identity documents, and MERNİS databases, then the field's implicit assumption that computational surveillance is a product of Western modernity, subsequently exported to the rest of the world requires revision. The Turkish case demonstrates that a non-Western state developed a sophisticated, internally coherent visual-administrative apparatus that evolved through continuous institutional inheritance across three regime types (imperial, republican, post-liberal) and four media substrates (photographic, paper-documentary, electronic-database, algorithmic-biometric) without rupture in its categorical logic. Other imperial and post-colonial contexts such as the British Raj's census apparatus, the French colonial photographic archive and the Soviet internal passport system likely harbour comparable genealogies that would further destabilise the field's Western-centric periodisation. The point is not that these genealogies are identical but that they are *independent* as they demonstrate that the categorical violence of visual-administrative governance is not a uniquely Western invention but a recurring structural feature of

modern state power, arising wherever sovereign authority encounters the problem of rendering large, diverse, mobile populations legible at scale.

The categorical violence of contemporary algorithmic systems is not a technological novelty. It is an intensification of visual-administrative logic with imperial roots. Understanding this genealogy changes both how we theorise surveillance and how we resist it because resistance aimed only at the algorithm misidentifies the problem. The algorithm is the latest medium. The categorical violence is the structure. The structure, as this article has shown, is older, deeper, and more tenacious than any single technology that carries it.

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