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Simplifying Urdu:
Nasta'liq Types for Mechanical Composition and the Forces of Colonization, Monopolization, and Ownership

Borna Izadpanah | *Book History* | Accepted Version | January 2025

Introduction

Deeply rooted in the cultural legacy of the Mughal Empire and the Persian language in South Asia, Nasta'liq[1] has historically served as the preferred writing style to represent the Urdu language.[2] Despite its aesthetic appeal, characterized by its fluidity and cascading compositions, Nasta'liq is considered one of the most demanding forms of writing for typographic representation—a dilemma that dates back to the late sixteenth century and Europe's early attempts to create Nasta'liq types.[3]

This article critically engages with crucial moments in the history of Urdu Nasta'liq type-making in the twentieth century and explores its wide-ranging implications for Urdu-speaking communities. It begins in the 1920s with an examination of the early efforts of Nizam's Government in Hyderabad (Deccan) and proceeds to evaluate the role of British manufacturers of mechanical typesetting machines, Linotype and Monotype, in the development and dissemination of Urdu typography from the 1940s onward. This historical narrative culminates in the introduction of the first "successful" digital Urdu Nasta'liq typeface in the 1980s.

By positioning Nasta'liq type-making at the center of broader typographic, cultural, political, and technological frameworks, this study aims to uncover the driving forces behind such typographic ventures, as well as their reception by the reading public, publishers, and typesetting machines manufacturers. Twentieth-century Urdu Nasta'liq type-making, thus emerges as a critical case study, a lens through which to understand the enduring efforts of various Asian language communities to preserve the integrity and visual identity of their languages amidst the development of diverse printing and typesetting technologies.

Crucially, this study draws attention to the colonial and capitalist dynamics that have dominated and monopolized typesetting technologies, forcing certain communities into a marginalized position where they must actively work against exclusion. This article argues that these constraints, alongside broader economic and political forces, shaped the evolution of Urdu type-making, culminating in the eventual adoption of digital typesetting, which ultimately offered a viable response to the "Urdu problem." This discussion lays the foundations for deeper understanding of the substantial challenges faced by typographically underrepresented languages—issues that persist in the digital age, marked by disproportionate distribution of resources, data, and access.

Beginning with the colonial period and extending into post-Partition Pakistan, this article examines the twentieth-century struggle to represent Urdu's Nasta'liq style through print. A careful study of Urdu's publishing landscape—spanning lithography, mechanical typesetting, and eventually, digital typesetting—reveals a multi-layered narrative of technological challenges, cultural priorities, and socio-political pressures. The findings demonstrate that the visual integrity of Urdu in print has been as deeply shaped by socio-political forces and colonial legacies as by technological advancements, and reveal the distinctive nature of Urdu's typographic evolution.

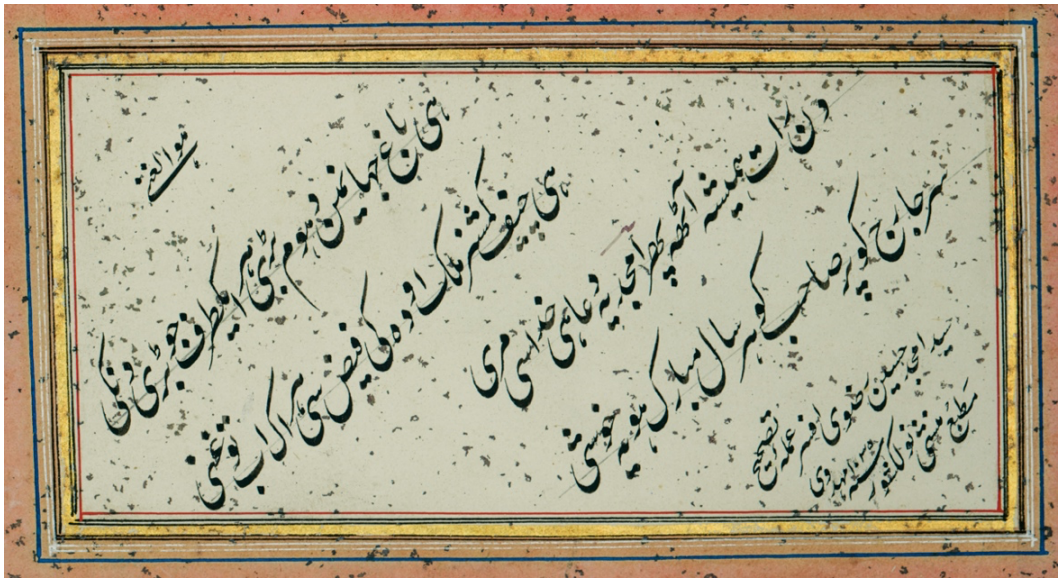

Figure 1. A specimen of Urdu Nasta'liq style in the form of new year greeting to Sir George Cooper from Sayyid Amjad Husain Razavi, Editor in Chief of Munshi Naval Kishore Press dated 1035 Mahdavi. Private Collection.

Framing the "Urdu Problem"

In April 1963, the editor of UNESCO's "Information Bulletin on Reading Materials" highlighted a persistent issue in Urdu newspaper printing, writing "Urdu is probably the only important language in the world which still fights shy of type-printing."[4] This remark prefaced an article by Pakistani publisher Zubair Ahmed Tamannai, who detailed his decades-long quest to solve the "problem" of Urdu typography—particularly, adapting Nasta'liq, Urdu's preferred writing style, to Western mechanical typesetting technologies. Despite Urdu's rich calligraphic heritage, the limitations of existing print technologies culminated in numerous failed attempts, as efforts toward mechanical composition were found ineffective or unsatisfactory. The result was an enduring tension between cultural fidelity and technological adaptation.

Central to this struggle were challenges posed by Nasta'liq's cascading and fluid nature, which resisted simplification into the discrete and linear characters demanded by hot-metal and phototypesetting machines such as Monotype and Linotype.[5] Consequently, the Urdu publishing industry faced repeated failures and compromises, from awkwardly modified typographic representations to inefficient, or, prohibitively costly solutions, as it grappled with the need to balance the established principles of Nasta'liq style with the demands of mass production.

The legacy of Gutenberg's movable-type technology loomed heavy over Urdu printing. Early on, the introduction of Arabic-script printing with movable type during the sixteenth century exposed a fundamental restriction of Gutenberg's printing model, which was developed for the Latin script. While Latin script could be broken down into a limited set of non-connecting characters, Arabic-script writing styles—Nasta'liq included—require multilevel connections and context-sensitive shaping, which defied easy adaptation to Latin-centric typesetting technologies.[6] As European and colonial printers attempted to apply typographic printing methods to languages like Arabic, Persian and Urdu, they resorted to "simplified" or "linear" renditions of the writing styles—especially Naskh—often at the expense of the established principles of such highly developed writing styles (Figure 2 & 3).[7]

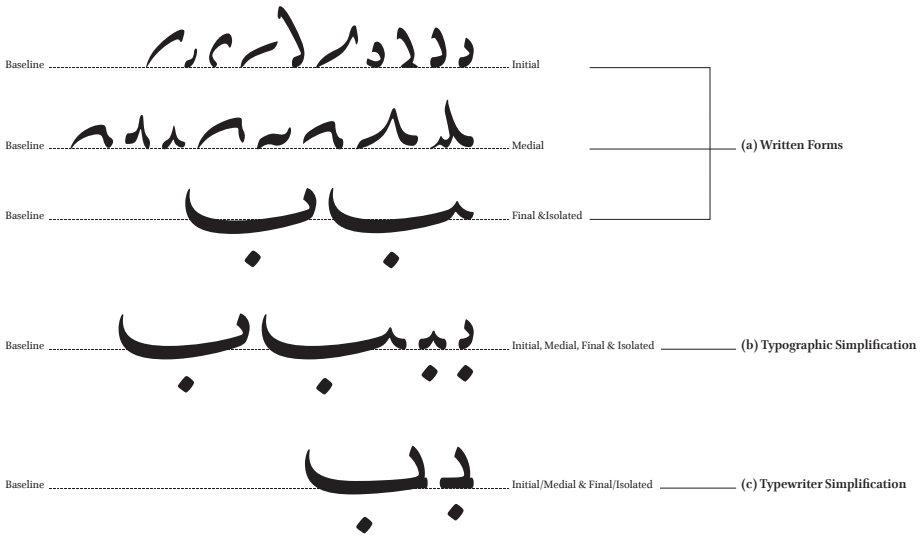

Figure 2. Typographic simplification of the Naskh style:

(a) The written variations of the letter *be* in the Naskh style, showing ten variants in its initial position, eight in the medial position, and the final and isolated or unconnected forms. The choice of initial and medial forms is determined by the adjacent characters to which they connect.

(b) The typographically simplified versions of the letter *be*, reduced to four forms: initial, medial, final, and isolated. In this simplified system, the forms are fixed and unaffected by neighboring characters.

(c) Further simplifications of the letter *be* as found in Arabic typewriters, condensed to two forms; one representing both the initial and medial positions, and another for the final and isolated.

(Illustration designed by the author)

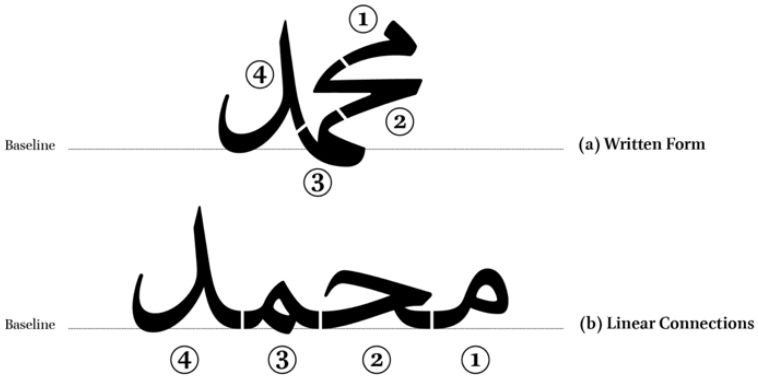

Figure 3. Linear connecting method:

(a) The written form of the word Muhammad, composed of four letters: (1) initial *mīm*, (2) medial *ḥāh* (*baṛī ḥe* in Urdu), (3) medial *mīm*, and (4) final *dāl*, each connecting the neighboring letter(s) at different horizontal levels. Particularly, the letters *ḥāh* and *mīm* in medial and final positions contribute to the cascading compositions characteristic of Arabic script.

(b) The word Muhammad in a linear format with all letters connected along the baseline. Here, the medial *ḥāh* (2) is adapted from its initial form by adding a connecting stroke. This adapted form of medial *ḥāh*, is a typographic innovation in the Naskh style, which did not exist in handwriting.

(Illustration designed by the author)

Attempts to print in Nasta'liq emerged sporadically in Europe but only gained traction in the late eighteenth century when British orientalist Charles Wilkins developed a Nasta'liq type in colonial India (Figure 4).[8] Despite his early efforts, Wilkins ultimately deemed Nasta'liq impractical for typesetting, and instead favored typographically abstracted forms of the Naskh style for later projects.[9] Such technological limitations, coupled with insufficient cultural understanding, continued to hinder Nasta'liq's full integration into mechanized print.

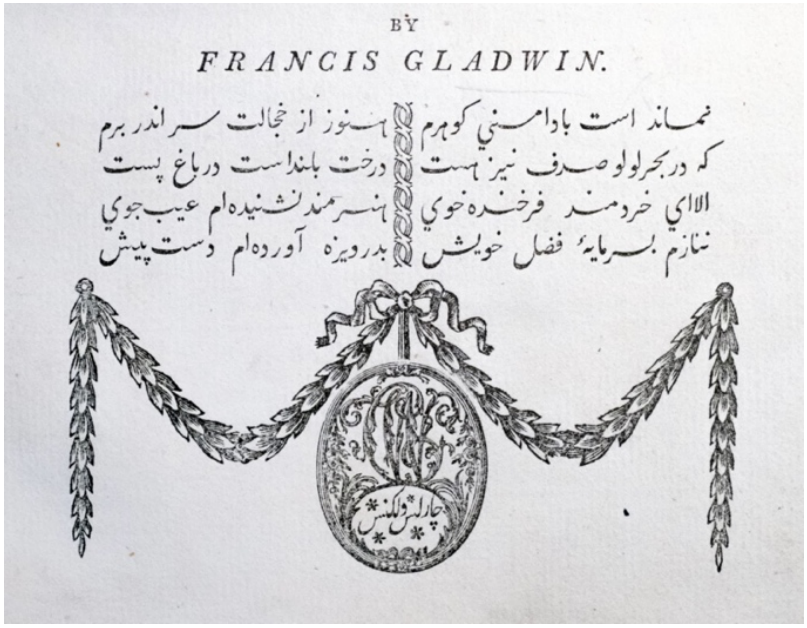

Figure 4. A Persian poem typeset with Charles Wilkins's Nasta'liq type, from the title page of Francis Gladwin's *A Compendious Vocabulary English and Persian*, printed in Malda, Bengal, in 1780. The British Library.

By the early nineteenth century, lithography emerged as a promising alternative for letterpress printing, allowing for faithful reproduction of handwritten Nasta'liq.[10] Lithography preserved the intricate strokes and flowing lines that movable type could not capture and became the preferred printing method in South Asia and Iran, playing a crucial role in maintaining regional and linguistic diversity in print culture.[11] Lithography also paved the way for new developments in the fields of calligraphy, illumination, and illustration by enabling artists and craftspeople originally trained in manuscript production to adapt and apply their expertise to enhance the art of lithographic printing. However, by the mid-twentieth century, lithographic printing, though stylistically effective, was considered too labor-intensive to meet the growing demands of mass media. Publishers, especially those producing daily newspapers, sought mechanical alternatives, which, in turn necessitated the adaptation of technologies originally designed for writing systems structurally and functionally analogous to Latin.

The gradual shift from lithography to mechanical typesetting marked a turning point, one that forced compromises to the visual identity of Urdu. As local contributions to type design dwindled, written Urdu began to lose its distinctive character. Instead, it was reshaped by Western typefoundries, whose technical priorities often overshadowed the linguistic and cultural needs of Urdu readers. These limitations were not merely technical obstacles; each compromise in typography threatened to erode the revered aesthetic qualities and cultural significance of the Nasta'liq style.

The following sections explore the pioneering, and often overlooked, local efforts within South Asia to develop Urdu type during this transition. These innovations, though ultimately

unable to overcome the limitations of mechanical typesetting, laid the groundwork for the digital solutions that emerged in the late twentieth century that finally managed to preserve the integrity of Nasta'liq in a new technological era.

Script, Style, and State: South Asian Efforts to Adapt Urdu for Typography in the Twentieth Century

Throughout the twentieth century, significant efforts were made to adapt Urdu Nasta'liq for modern typographic printing methods—particularly, replacing lithography with mechanical typesetting. However, and despite extensive trials, most initiatives struggled with practical limitations, technical failures, and limited uptake among readers.

Azad's al-Hilal *and Naskh-based Types*

An early initiative was Maulana Abul Kalam Azad's (1888–1958) experiments in Kolkata through his weekly journal, *al-Hilal*, launched in 1912. The first issue of this journal, published on 13 July 1912, was printed using a "Turkish" type in the Ottoman Naskh style.[12] However, this type was found to be "entirely different from the commonly used Urdu type in terms of the arrangement and number of its compartments," leading to significant difficulties for typesetters and resulting in output that was "entirely incorrect and irregular." Such was the extent of these issues that *al-Hilal* was compelled to announce that a majority of the readers showed a preference for an Urdu type over the Turkish Naskh, used in the journal (Figure 5).[13]

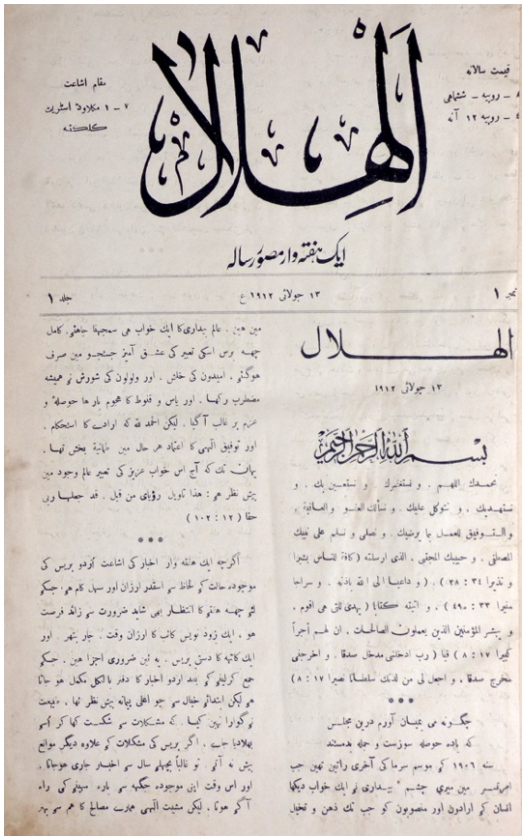
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Figure 5. The front page of the first issue of *al-Hilal*, dated 13 July 1912, printed using a "Turkish" Naskh type.

Over eighteen months, *al-Hilal* changed its printing type three times, ultimately finding none that could accurately represent Urdu's distinct features. Although Naskh types could be more feasibly mechanically typeset, they failed to resonate with readers accustomed to the fluidity of the Nasta'liq style. In response, *al-Hilal* reverted to a hybrid approach in 1927, pairing Naskh-printed pages with lithographed sections in Nasta'liq.[14]

Hyderabad's Initiatives and Osmania Type Foundry

Parallel to *al-Hilal*'s experiments, the Central Press of the Nizam's Government of Hyderabad (Dar al-Tab'-i Sarkar-i 'Ali) embarked on a series of initiatives to produce Nasta'liq types compatible with modern typesetting. These efforts were launched under the auspices of Mir Osman Ali Khan (1886–1967), the last Nizam (ruler) of the Princely State of Hyderabad (the largest princely state in British India), and his finance minister Muhammad Akbar Nazar Ali Hydari (1869–1941).[15] An important objective was to enhance the practicality of Nasta'liq typesetting and its compatibility with mechanical typecasting and composition technologies.[16]

Following a royal decree issued on 10 March 1921, it was mandated that printing with movable type be adopted to supersede lithographic methods, with the stipulation that the type employed should be in the Nasta'liq style.[17] Around two years later, Hydari instructed the Central Press to create a Nasta'liq type that aligned with the style's principles while also meeting contemporary needs. As a result, Osmania Type Foundry was established within the Central Press, with the government allocating 86,000 rupees for the creation of a Nasta'liq type.[18] Under the supervision of the Central Press's Superintendent, R. V. Pillay, and through the efforts of Syed Abdul Karim Husaini,[19] a font of Nasta'liq type was developed over approximately four years. The calligrapher behind this type is said to have been an individual named Maulvi Sirajuddin.[20] This Nasta'liq type, set at 24-point, consisted of 740 single characters and 441 compounds, resulting in a character set of 1181 sorts.[21]

Despite initial acclaim, this new type encountered significant challenges. While experts praised its stylistic fidelity, the extensive character set—intended to capture Nasta'liq's curvatures and connections—proved impractical for large-scale typesetting.[22] Its intricacies increased lead consumption, heightened costs, and left the type vulnerable to damage, as delicate connections and edges frequently broke under the pressure of the printing press.[23]

In 1927, the Central Press published Syed Ross Masood's (1889–1937) lecture *Ruh-i Japan* (Spirit of Japan) as a specimen of the newly developed Nasta'liq type. This publication included a colophon praising the Central Press's achievement in Nasta'liq type-making (Figure 6):

> Among the countless and immeasurable blessings of Emperor Humayun Osmani, one is now appearing before the public in the form of these printed pages of Nasta'liq type … Today, we have nearly solved a significant problem that remained unresolved despite a century of effort. Along with this, we must acknowledge that there are still some minor flaws in our prepared type, which, God willing, will be eliminated after a few more trials.[24]

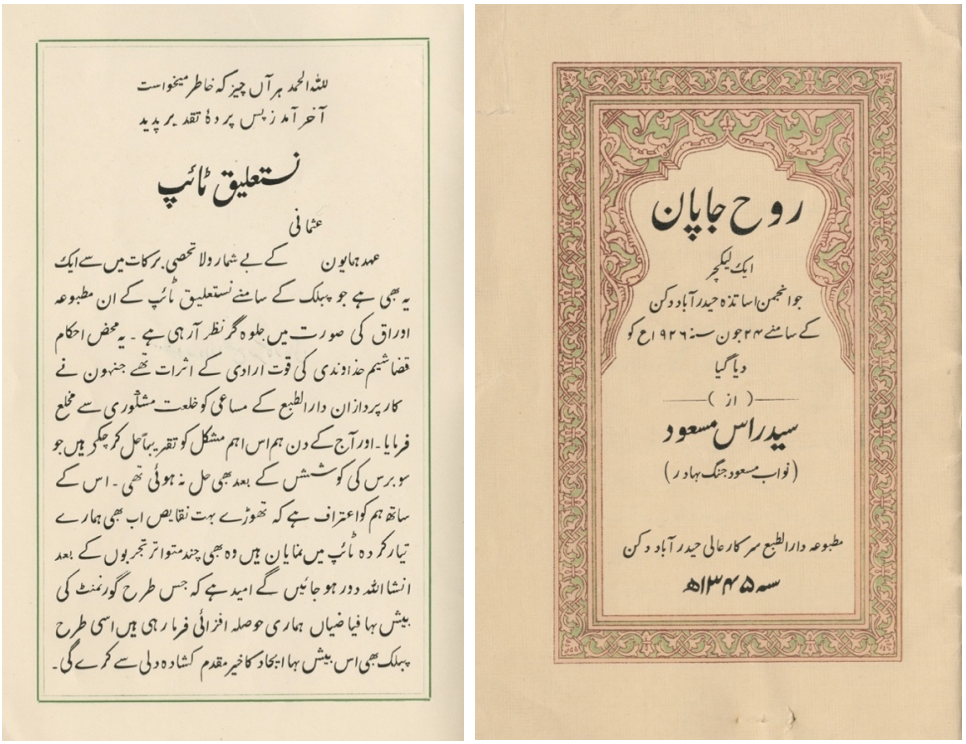


Figure 6. The front cover (right) and the colophon (left) of the 1927 edition of Syed Ross Masood's *Ruh-i Japan*, providing some details regarding the Nasta'liq type employed for this work's printing. The Type Design Collection, University of Reading.

Following the publication of *Ruh-i Japan*, additional criticisms were made, this time concerning the incompleteness of the Nasta'liq type employed. Despite having an extensive character set, certain word compositions could not be correctly rendered with this type and had to be split into segments.[25] Concerns were also raised about the method of joining letters in various contexts based on their height, leading to a situation where the cast types, due to their unspecified joining method, could not be reused and had to be melted down. Moreover, the sheer size of the character set required the procurement of larger type cases, incurring further financial costs.[26] It was pointed out that the process of typesetting with Nasta'liq type was so slow that:

> In comparison, a high-quality scribe using lithography could do more than four times the work. A scribe of average quality could do even more. Moreover, a significant flaw that emerged was that dots had to be cast on very thin bodies. Often, these dots would break under the pressure of the printing machine, defeating the purpose of printing with such type. Additionally, another major drawback was that this type could not be cast in sizes smaller than twenty points, making it impractical for all printed materials requiring small text, such as daily and weekly newspapers, which have the greatest need for such type.[27]

Rafiq Beg's Fractional Approach

In 1927, ongoing concerns, especially the extensive character set, prompted the Nizam's Government to form a committee to review the type and recommend improvements.[28] Maulvi Abdul Haq (1870–1961), known as *Baba-i Urdu* (Father of Urdu), was appointed to oversee this task.[29]

While reviewing the Nasta'liq type at the Central Press, Abdul Haq received a proposal from Mirza Rafiq Beg, a publisher from Delhi, to considerably reduce the character set of Nasta'liq types.[30] Rafiq Beg, who had been independently publishing a monthly journal entitled *Numa'ish* since October 1921, attributed the shortfall in his journal's revenue to the inadequacies of lithographic printing.[31] Inspired by the typographic principles applied in Telugu and Marathi types, he spent five years developing his idea, yet struggled to find a typefounder willing to realize his vision.[32]

Recognizing the potentials of Rafiq Beg's work, Abdul Haq presented the proposal to the Government on his behalf, which led to approval and the commencement of trials. In this endeavor, Rafiq Beg was assisted by a calligrapher named Abdul Qayyum.[33] Over the course of a year, with an investment of over 14,000 rupees, Rafiq Beg developed a simplified Nasta'liq type employing what he called a "fractional" approach. This approach involved a linear method of connecting letters through elongated connecting strokes, aimed at reducing the number of required contextual alternates (Figure 7). This type, set at 14-point, consisted of only 253 sorts, representing a significant reduction from the Central Press's project with 1181 sorts. Rafiq Beg reflected on his ambitious goal, stating:

> I had arrived at the printing house with the claim that I would complete my type within two and a half hundred sorts. Truth be told, this was something that was considered impossible until then. Everything else was secondary. I had made no claims regarding the beauty or ugliness of the script. This was because I knew not what forms would emerge once these sorts were composed.[34]

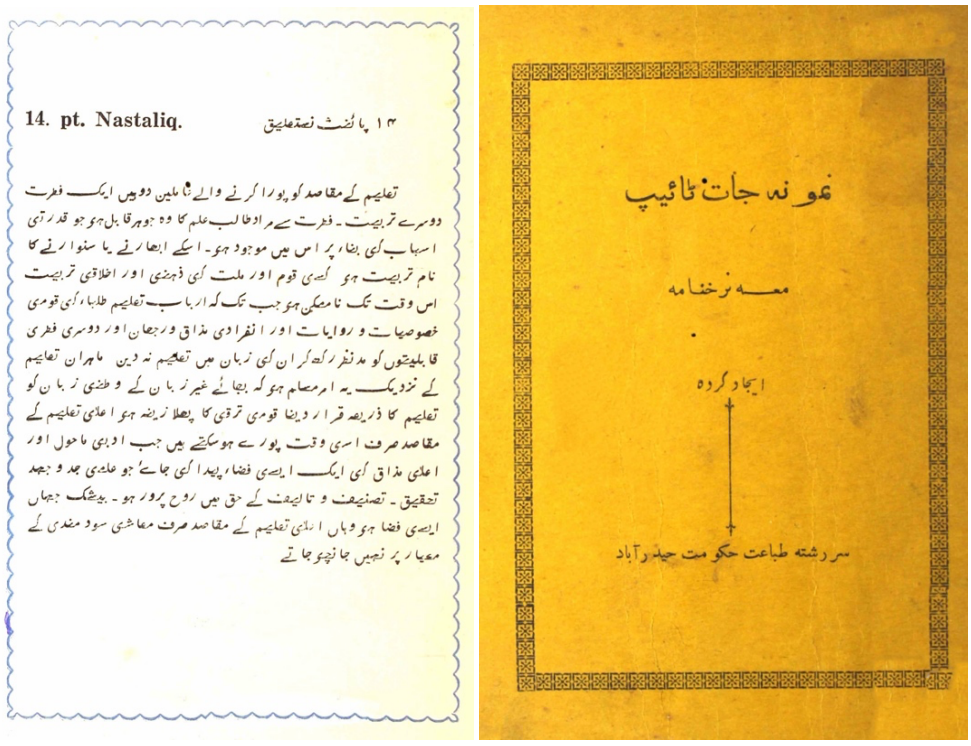


Figure 7. The front cover (right) and a specimen of Rafiq Beg's Nasta'liq type, set in 14-point (left), from the undated type specimen of the Central Press. The Rekhta Books.

While Rafiq Beg's approach marked an innovative step toward simplification, it was met with criticism. Rafiq Beg conceded that the "fractional" approach deviated from established typographic norms. This process was criticized for being overly time-consuming and labor-

intensive for both composition and correction; while the "fractional" nature of the type deterred potential buyers.[35] Critics argued that unconventional method of connecting letters was "too ugly," particularly when compared to the type previously developed by the Central Press.[36] Other curious features of Rafiq Beg's approach include the oddly shaped "teeth" of letters like *be* and *sīn* in their medial positions, and the repurposing of the isolated form of letter *ye* for the final position (Figure 8).

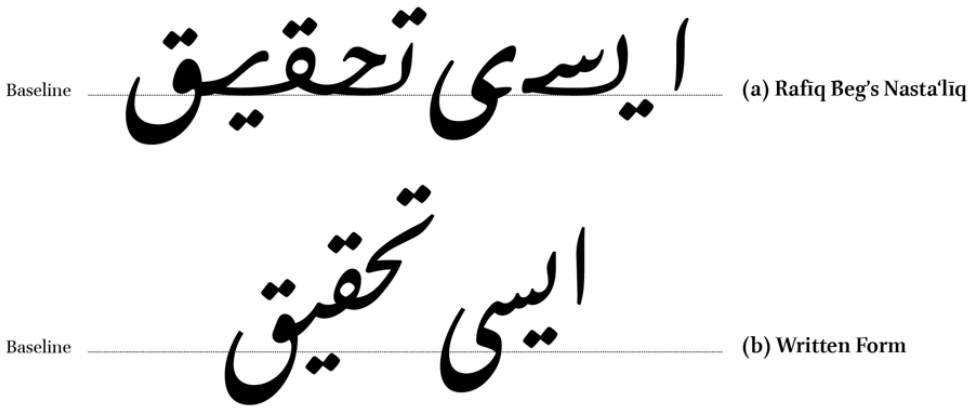


Figure 8. (a) Words *isi* and *tahqiq* drawing after Rafiq Beg's connecting method, used in his Nastaʿliq type, achieving a linear connection. (b) The written form of the same words in their correct composition according to the script rule. Note especially the arrangement of the initial *ye*, medial *sīn* and final *ye* in the word *isi*, and the medial *baṛī ḥe* and medial *ye* in the word *tahqiq*.

A New Round of Revisions

In July 1928, the Central Press instigated a new round of revision and refinements for the two Nastaʿliq types it had simultaneously developed. Rafiq Beg was tasked with enhancing the visual appeal of his type, while the Central Press focused on reducing the number of type sorts of their original Nastaʿliq type. Both aimed to complete these tasks within a year.[37] However, due to unforeseen challenges, Rafiq Beg's deadline was extended by four months, and the Central Press was granted an additional two months.[38] After fourteen months of concerted work, this effort resulted in the development of two revised Nastaʿliq types: a "fractional type" and a "full-body type," with the latter achieving a reduced character set of fewer than 600 sorts.[39] To evaluate the effectiveness of these types, A. F. Slater from the Printing and Stationery Department of the Government of India, along with the Director of Public Instruction of Hyderabad, conducted several practical experiments. They unanimously favored the full-body Nastaʿliq type, commending its ease of composition, adjustment, and redistribution.[40]

An undated type specimen entitled *Namuna-jat ta'ip ma'nirkhnama*, published by the Central Press, demonstrates that during this period of trials and experiments, five fonts of Nastaʿliq type were produced in Hyderabad. These included a 14-point type consisting of 255 sorts, an 18-point type with 472 sorts, a revised version of the 18-point type with 478 sorts, a 24-point type comprising 659 sorts, and a 30-point type with 550 sorts (Figure 9). Notably, the 14-point type is identified as the "fractional type" developed by Rafiq Beg. Additionally, the specimen showcases attempts to develop modified versions of the Naskh and Thuluth styles for printing Urdu with a reduced character set, namely the series called "Osmani" and "Majeedi" scripts.

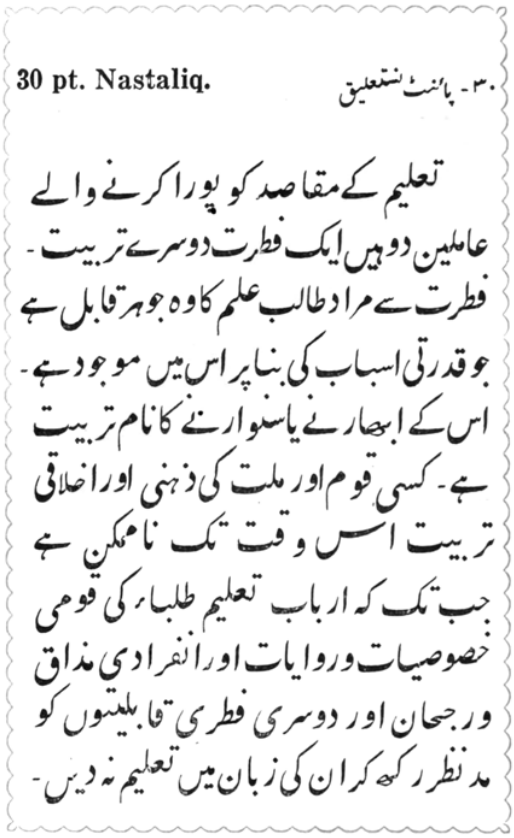


Figure 9. A specimen of the 30-point Nasta'liq type form an undated type specimen of the Central Press. The Rekhta Books.

Another type specimen from the Osmania Type Foundry, dated 1933, features only the 24- and 30-point Nasta'liq types.[41] Unlike the undated specimen that focused exclusively on Urdu, this edition features specimens in Arabic and Persian, suggesting an intent to cater to a broader linguistic audience. Among the Persian examples is a passage from a poem by the esteemed poet (1877–1938), set in the 24-point Nasta'liq type adorned with "expanded characters" or *kashida* variants.[42] While the undated specimen records 659 sorts for the 24-point type, the 1933 specimen specifies 594 characters: including 457 singular, 102 compounds, and 35 extra sorts.[43] Notably absent from this collection is the 14-point "fractional" type; instead, the specimen includes pricing information for acquiring these types (Figure 10):

> The price list of these various attractive types can be found on page (22), solely for the public welfare and in consideration of spreading and publishing Urdu knowledge and wisdom, these are available at such a low price from the Osmania Type Foundry without any profit. However, supply is possible only after receiving half the price in advance.[44]

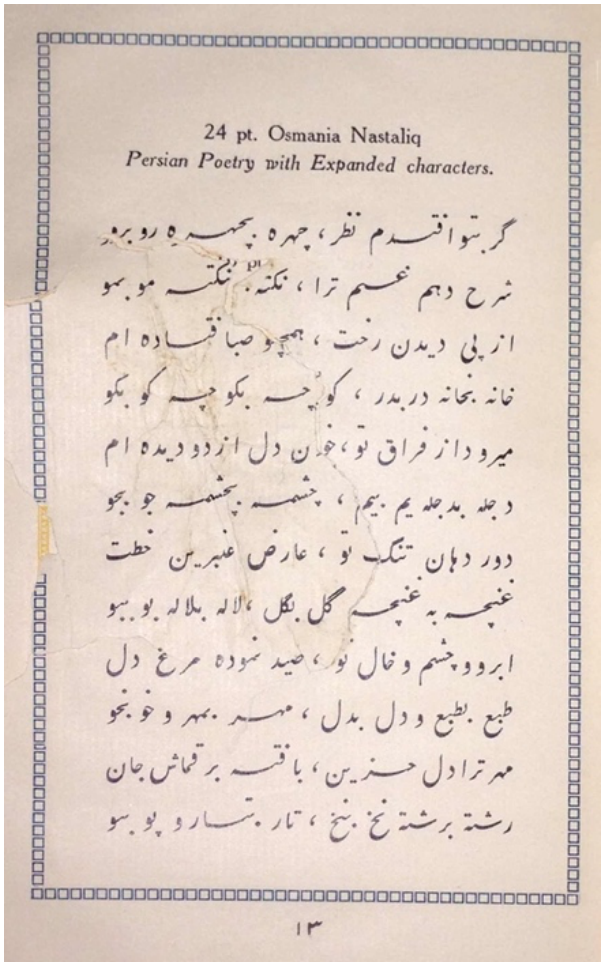


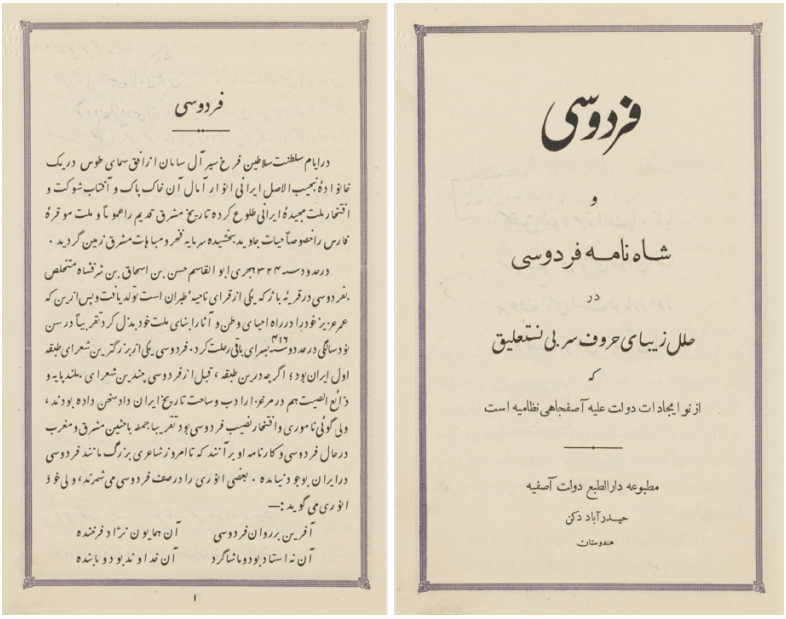
Figure 10. A specimen of the 24-point Nasta'liq type featuring expanded characters, from the 1933 specimen of Osmania Type Foundry. Curtesy of Andrew Amstutz.

Cultural Diplomacy through Typography: Central Press's Nasta'liq Types at Firdawsi's Millennial

In recognition of recent achievements in Nasta'liq type-making, the Nizam's Government convened a conference in Hyderabad, inviting respected Indian leaders and learned individuals to evaluate and discuss the qualities and potentials that the Nasta'liq types had to offer. In 1933, these types had been prominently displayed at the All-India University Exhibition, which toured the subcontinent by train, drawing attention from the consuls of Afghanistan and Iran in Mumbai.[45]

In 1934, on the occasion of the millennial celebration of the renowned tenth- and eleventh-century Persian poet Firdawsi, the Nizam's Government presented two variations of the Nasta'liq type—a larger, bolder version and a smaller text version—to the Iranian Government. To showcase the potentials of these types, two Persian publications were produced, including an address titled *Persian Language in the Deccan*, by the aforementioned Abdul Karim Husaini, who served as the Nizam's Government's delegate to the anniversary celebrations.[46] Another Persian publication, also compiled by Husaini, paid tribute to Firdawsi's epic *Shahnama*, with its English cover providing the following description (Figure 11):

Firdausi and his Shahnama in the most beautiful and elegant script of Nastaliq type, designed by H. E. H. the Nizam's Government (India) after twelve years' hard and laborious experiments, costing nearly two to three lakhs [hundred thousand] of rupees, to maintain the prestige of, and preserve, the languages of Urdu and Persian.[47]



فردوسی

و

شاه نامه فردوسی

در

حلل زیبای حروف سربی نستعلیق

که

از نو ایجادات دولت علیه آصفجاهی نظامیه است

مطبوعه دارالطبع دولت آصفیه

حیدرآباد دکن

هندوستان

Figure 11. The title page and the first page of the 1934 *Firdawsi va Shahnama-i Firdawsi*, printed at the Central Press in Hyderabad. The Harvard Library.

There is evidence indicating that Husaini's publications and the Nasta'liq types of Central Press attracted attention from the Iranian press. Prominent newspapers such as Tehran's *Ittila'at* and a special issue of *Iran-i Bastan* spotlighted the contributions of Husaini and the Central Press. *Ittila'at* particularly praised Husaini's efforts on its front page, noting that "after seven years of dedicated effort and an investment of 400,000 rupees, he [Husaini] has prepared these Nasta'liq types, thereby significantly facilitating the printing process"[48] (Figure 12).

اطلاعات

(دو شنبه هفتم دهم مهر ماه ۱۳۱۳)

سی دینار

محمد طاهر رضوی ام - ای

دکتر محمد نظام الدین

آقای سید عبدالکریم حسینی
نماینده اعلیحضرت نظام دکن

Figure 12. Report featuring the Hyderabad delegates at the millennial celebration of Firdawsi, as covered in the Tehran newspaper *Ittila'at*, from 8 October 1934. From left to right, the individuals pictured are Abdul Karim Husaini, Muhammad Nizamuldin, and Muhammad Tahir Razavi.

Legacy and Decline of Urdu Typefounding Efforts in Hyderabad

Despite significant achievements in Hyderabad, Urdu typefounding industry faced declining prospects in the late 1930s.[49] The practical shortcomings of Nasta'liq types—primarily the slow pace of composition and the prohibitive cost of typesetting—meant that these innovations struggled to compete with the established lithographic methods and the modern Western typesetting technologies. Although Hyderabad's Nasta'liq types gained international recognition, including display at the All-India University Exhibition and inclusion in diplomatic gifts to Iran, their influence remained largely symbolic.

The efforts in Hyderabad exemplify the technological hurdles and the socio-political ambitions of early Urdu typefounders. These endeavors represent some of the last Urdu type-making enterprises to rely heavily on local experts and craftspeople. As the publishing industry pivoted toward mechanical typesetting technologies and increasingly depended on Western machinery, these initiatives struggled to progress without the support of Western companies. This transition also reflected a move away from recognizing the cultural significance of such projects within their language communities, veering instead towards profit-driven corporate strategies.[50]

Quest for Mechanical Composition of Urdu

Amid the evolving technological landscape of the twentieth century, Urdu newspapers sought to harness the rapid and advanced typesetting technologies of the time. F. A. Siddiqi, assistant editor of the Urdu newspaper *Daily Dawn*, provided a vivid description of newspaper production in Pakistan around 1950:

> Immediately the news copy starts coming in from the teleprinter, it is subjected to sub-editing and then to translation into Urdu. Checking and passing news in Urdu is, of course, the news-editors' job, who then pass the copy to the calligraphers' room.
>
> A calligraphers' room is a necessity in an Urdu newspaper office and a number of calligraphers squat together on a wooden platform, each of them being armed with half a dozen pens with varying points, penknives, pencils, erasers, rule, and ink-pots, all kept in a wooden box. Each calligrapher has a wooden plank equipped with a pillow to recline against, and he concentrates on his task in a posture akin to that of an engraver or needle-worker.[51]

Siddiqi goes on to detail the challenges, noting that this highly specialized and time-consuming workflow—dependent on skilled calligraphers working in carefully controlled conditions—required about fifteen men and twelve hours to produce a single six-page, seven-column issue. After calligraphy was complete, proofreading and corrections added further steps, often with visible marks left on the printed pages. As Siddiqi notes, the layout itself relied largely on the calligrapher's decisions, highlighting the critical role of these craftspeople in shaping the final product.[52]

This labor-intensive process, which a Linotype report deemed "almost medieval" compared to Western printing practices, prompted efforts to adopt simplified Naskh types for Urdu.[53] This approach necessitated the inclusion of a few Urdu-specific characters not found in Arabic types and had already gained traction in Iran, where newspapers transitioned from lithographic to typographic production. However, these typesetting solutions made limited inroads in Pakistan, where lithographic printing endured into the desktop publishing era.

Typographic Dependencies: Struggles for Original Urdu Types

Efforts to mechanize Urdu typography echoed similar struggles faced by Iranian publishers, who were also unable to produce types independently due to their reliance on companies like Linotype and Monotype. Even when types were designed domestically to suit the required manufacturing standards of typesetting machines, producing metal or film matrices was possible only with the cooperation of these firms.[54] Tehran's major newspapers, *Ittila'at* (established in 1926) and *Kayhan* (established in 1942), encountered prolonged resistance from Linotype and Monotype in their attempts to obtain original types that met their language's specific requirements. According to *Ittila'at*'s founder, 'Abbas Mas'udi, English companies repeatedly refused their designs, indicating that Urdu newspapers might face similar obstacles if they sought fully custom typographic solutions.[55]

Linotype's initial attempt to introduce a simplified Urdu Naskh type system dates back to the 1930s, as evidenced by an Indian patent for "an improved manner of and a type font for printing in Urdu or a like scripts."[56] By 1947, when Urdu was instated as Pakistan's national language after the Partition, newspapers like *Daily Dawn* and *Daily Jang* began experimenting with simplified Naskh types in certain issues.[57]

Despite Linotype's acknowledgment that in adapting Urdu for mechanical composition "the difficulties which had to be faced were considerable," their proposed solution—a modified Naskh type—was designed with minimal adjustments to accommodate Urdu's structural nuances. Developed with input from American Indologist and Sanskritist William Norman Brown (1892–1975), Linotype's Urdu Naskh made its debut on the first of June 1950, when *Daily Dawn* issued the first Urdu newspaper composed on Linotype machines. The newspaper's editor heralded this achievement in a leading article, stating, "for the first time in the history of Urdu journalism, we present a daily paper printed by Linotype … our today's issue is an historic event of which we may be justly proud"[58] (Figure 13).

5 LINOTYPE MATRIX

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Newspaper men who are familiar with the sight and sound of a battery of Linotype machines, busy at their task of keeping the world informed, would be astonished to see how a newspaper is usually produced for the world's newest nation.

In August 1947 Pakistan became a self-governing Dominion, and one of the early decisions the Assembly made was to establish Urdu as the national language. The written form of this language is a calligraphic script, very similar to Arabic in appearance. The subtleties of line, curve, and point which are necessary before a written text has the approval of a scholar are considerable, and the retention of these subtleties, together with the fact that the alphabet contains several hundred characters and combinations, means that, until recently, attempts to produce a type fount have been unsuccessful. It is for this reason that the conditions which have prevailed in printing Urdu may be described—by comparison with Western typographic methods—as almost mediæval. The only means available and in regular use in the production of newspapers, books, periodicals, and practically every kind of printed matter has been to write them and present them to the reader in hand-written form—duplication of copies being achieved by means of lithography.

Newspaper production

An interesting description of the production of a newspaper in Pakistan was recently given by Mr. F. A. Siddiqi, assistant editor of *Dawn* (Urdu):

'Immediately the news copy starts coming in from the teleprinter, it is subjected to sub-editing and then to translation into Urdu. Checking and passing news in Urdu is, of course, the news-editors' job, who then pass the copy to the calligraphers' room.

'A calligraphers' room is a necessity in an Urdu newspaper office and a number of calligraphers squat together on a wooden platform, each of them being armed with half a dozen pens with varying points, penknives, pencils, erasers, rule, and ink-pots, all kept in a wooden box. Each calligrapher has a wooden plank equipped with a pillow to recline against, and he concentrates on his task in a posture akin to that of an engraver or needle-worker.

'As sheets of news copy pour in, the Head Calligrapher distributes them among his company and writing begins.

'The work is done on starch-treated sheets of transfer paper dyed yellow, while the ink is of a special composition whose marks are exasperatingly indelible.

'Speed of calligraphy is very slow and the atmosphere needed is one of perfect calm. During the night very strong light is required overhead, while during daytime there must be plenty of light and, if possible, no breeze. Breeze blows away paper and its fluttering shakes a calligrapher's hand. It is a dilatory process—a six-page, seven-column paper taking about fifteen men and twelve hours' time to finish.

'When proof-reading is required, it has to be done from the inscribed sheets of transfer paper and subsequently corrected by the calligraphers themselves, often leaving their marks behind, so that next morning the reader can too easily discern the corrections.

'After the calligraphy is finished the "takes" are spread over a sheet of paper of the newspaper size, and pasting-up is done by the Head Calligrapher; In other words, it is the calligrapher rather than the news-editor upon whose choice most of the make-up depends.'

The process is slow, irregular, and unsatisfactory from almost every point of view: corrections and revisions are difficult to make; illustration is very unsatisfactory; the quality of printing is generally low, and the speed of production totally inadequate.

That Pakistan should have to depend on scribes for the production of all printed matter in Urdu seriously impedes the nation's development—affecting almost every phase of activity and detrimental to the country's economy. It has been recognised by many of the leaders of Pakistan thought that a radical change in the system is urgently necessary, in order that the country can move forward with its programme of educational and technical development.

The way ahead

Great interest has been shown, therefore, in the efforts which have been made in the past three years to provide Pakistan with the means of producing printed matter in its national language by *typographic* means. Determined efforts to devise a form of Urdu script which could be composed mechanically have been made by a number of people, amongst whom we may mention Mr. I. H. Siddiqi, superintendent of the Sind Government Press, and Mr. S. B. Haq of the Pakistan Central Government Press—with much encouragement from Pakistan Herald Limited, proprietors of Pakistan's most important newspaper, *Dawn* (part of whose title-piece is shown at the head of this article).

The difficulties which had to be faced were considerable; on the one hand differences of opinion as to the particular form of script to be used, and on the other, the necessity of producing a fount which could be accommodated in the magazine of the Linotype machine. A particular difficulty is that the problem is a multi-lingual one; Urdu and English are required in Western Pakistan, and Bengali, Urdu, and English are used in Eastern Pakistan. The multi-magazine Linotype completely fulfils this requirement; in spite of the fact that Urdu is read from right to left and Bengali and English from left to right, and that there are three entirely different letter forms, the Linotype operator can make the change from one to another without leaving his seat—a tribute to the versatility of the machine.

Mr. Herbert Ellis, representative of Linotype in Karachi, spent many months and much effort in advancing the project. A 'pilot' fount of Urdu was produced after much investigation and experiment by the Mergenthaler Linotype Company, who received valuable assistance from Professor Norman Brown of Pennsylvania University, an authority on Eastern scripts and vernaculars.

New departure

On 1st June of this year appeared the first Urdu edition of *Dawn* to be set on Linotype machines. In a leading article the editor wrote: 'For the first time in the history of Urdu journalism, we present a daily paper printed by Linotype . . . our to-day's issue is an historic event of which we may be justly proud.' The effect on the readers of the newspaper was immediate, as these congratulatory messages show: 'This revolutionary change in the method of printing Urdu will not only enhance the prestige of Urdu journalism, but will also add lustre to Urdu language and literature' (Kwaja Nazimuddin, Governor-General); 'This latest enterprise on the part of *Dawn* (Urdu) is a bold and unparalleled step in the service of Urdu language and Urdu press' (Dr. Ishtiaq Husain Qureshi, Deputy Minister, Ministry of Interior, Pakistan). In a letter to the newspaper, Professor Hakeem, of the University of Sind, wrote: 'The change from lithograph Nastaliq to linotype Naskh is an extremely desirable one . . . the adoption of the Naskh script for our national language will bring us into line with the major portion of the Islamic world,' and Dr. Abdul Haq, principal of All Pakistan Anjuman-e-Taraqqi Urdu, wrote: 'It was my lifelong desire to see an Urdu newspaper printed in type . . . typescript is essential for a newspaper; without that, progress is impossible.'

The task continues

It was agreed by everyone concerned in this important undertaking that the fount as used had certain imperfections, but it was also understood that it represented merely the beginning of the immense task of performing for Pakistan what had been done in Europe in the fifteenth century—the changing over from the laborious work of the calligraphers to the mass-production typographic method (the only possible system for a modern nation of eighty million people).

The work of revising Linotype Urdu so as to make it completely acceptable to the people of Pakistan is going ahead and there seems to be no doubt that in a very short time this great nation will be provided with the means of satisfying its need for educational and informative printed matter of all kinds.

The Linotype organisation's part in this great work has been considerable; it has been undertaken willingly not merely for its own benefit but because it readily accepts the principle of service to whoever needs it.

If you are not completely familiar with Linotype Matrix Slides and Blocks—that simple, speedy, and economical means of producing brand-new rules and ornamental material—you should get in touch with Linotype House, 21 John Street, London WC1 (the telephone number is Chancery 6065). *You'll learn of something to your advantage.*

Figure 13. Page five of *Linotype Matrix* from 1950 announcing the use of Linotype machines by *Daily Dawn*. The Type Design Collection, University of Reading.

This development was met with considerable praise and enthusiasm, notably from Abdul Haq, principal of Anjuman Taraqqi-i-Urdu, an organization established in 1903 to promote the Urdu language, literature, and culture in India and after the Partition in Pakistan. Abdul Haq, who had contributed to earlier Nasta'liq type-making efforts under the Nizam's Government, expressed his longstanding desire to see an Urdu newspaper printed in type, arguing, "typescript is essential for a newspaper; without that, progress is impossible."[59] However, while mechanical composition was an exciting prospect, the new type produced distorted, inconsistent text that posed readability challenges for Urdu audiences accustomed to Nasta'liq style. Ultimately, the type was not widely adopted, and this failure foreshadowed a predominantly unsuccessful quest to reconcile the principles of simplified types with the aesthetic and linguistic expectations of Urdu-speaking communities (Figure 14).

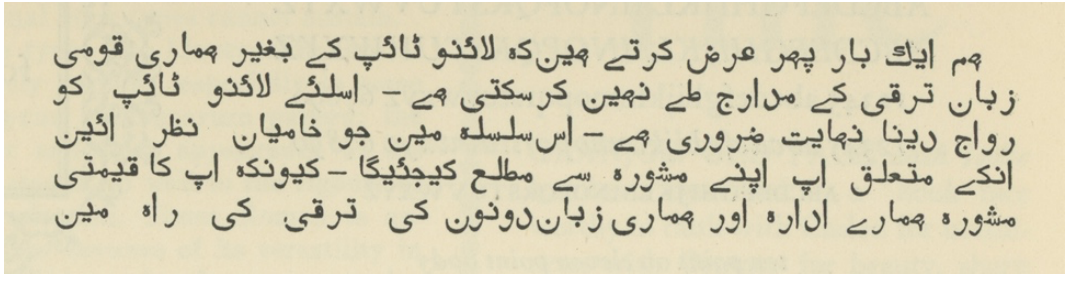
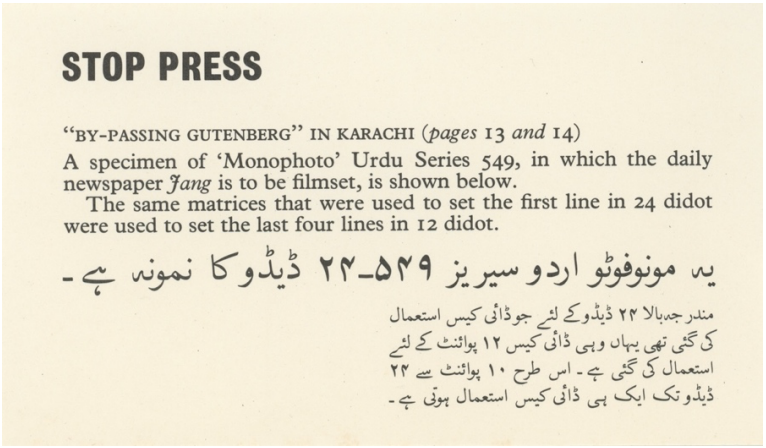


Figure 14. A specimen of Linotype's Urdu Naskh type, enlarged from page five of the 1950 *Linotype Matrix*. The Type Design Collection, University of Reading.

The Shift to Phototypesetting:
A New Era in Urdu Typography?

By the late 1950s, phototypesetting technology emerged as a promising alternative. The Monotype Company introduced the "Monophoto" typesetters, which were anticipated to "bring about striking improvement" and provide significant opportunities to representing languages like Urdu. In 1961, an article entitled ""By-passing Gutenberg" in Karachi", reported that Karachi's Javed Press would soon be using a "Monophoto" Filmsetter to print the Daily Jang, "in the elegant and brilliant "Monophoto" Urdu Series 549."[60] The article optimistically noted that the Government of Pakistan recognized the benefits of typographic printing over traditional calligraphy (Nasta'liq), and the new style was gradually gaining acceptance.[61] This move was, indeed, facilitated by the willingness of Mir Khalil-ur-Rahman (1918–1992), the founder of the *Daily Jang,* to embrace this change. In order to ease into the visual change, *Jang* had spent two years introducing its readership to the new printing style by incorporating type-set matter composed in Monotype Urdu 507—originally designed for Nizam's Government of Hyderabad—in many of its editions (Figure 15).[62]


STOP PRESS

"BY-PASSING GUTENBERG" IN KARACHI (*pages* 13 *and* 14)
A specimen of 'Monophoto' Urdu Series 549, in which the daily newspaper *Jang* is to be filmset, is shown below.
The same matrices that were used to set the first line in 24 didot were used to set the last four lines in 12 didot.

یہ مونوفوٹو اردو سیریز ۵۴۹-۲۴ ڈیڈو کا نمونہ ہے۔

مندرجہ بالا ۲۴ ڈیڈو کے لئے جو ڈائی کیس استعمال
کی گئی تھی یہاں وہی ڈائی کیس ۱۲ پوائنٹ کے لئے
استعمال کی گئی ہے۔ اس طرح ۱۰ پوائنٹ سے ۲۴
ڈیڈو تک ایک ہی ڈائی کیس استعمال ہوتی ہے۔

Figure 15. A specimen of Monotype's 549 type inserted in *The Monotype Recorder* 42, No. 2, Spring 1962. The Type Design Collection, University of Reading.

The arrival of new film matrices for Monophoto Urdu 549 and its Bold 649 variant in Pakistan was highly anticipated, and a ceremony attended by distinguished guests would be held to inaugurate the momentous change "from the scribe's pen direct to filmsetting, by-passing Gutenberg's invention of metal type." *Monotype Recorder* predicted that:

> Copies of *Jang* in its old and new dresses will be covetously awaited by those who collect "befores and afters" of restyling; and they are bound to serve as dramatic illustrations of what 'Monophoto' Filmsetters can do internationally, to raise typographic standards.[63]

Despite Monotype's optimism, the Naskh types adapted for phototypesetting did not resonate with readers. The propagated benefits, particularly regarding the aesthetic quality and accuracy script promoted by both Linotype and Monotype, were found to be exaggerated. Indeed, the phototypeset Naskh types delivered to Pakistan failed to significantly improve upon the hot-metal types previously used for typesetting Urdu. Nevertheless, the introduction of Monotype phototypesetting equipment in Karachi was reported by the company as a notable event. An issue of *Daily Jang* from 11 June 1961, printed using Naskh types alongside

handwritten headings, was featured on the cover of the *Monotype News Letter* in September 1961. Monotype celebrated this hybrid printing method as a "magnificent step that has been taken by Javed Press in adopting this most modern method of printing."[64] Despite the publicity of this one-sided narrative, this experiment did not resonate with readers, leading *Daily Jang* to revert to its handwritten text format (Figure 16).

63 Monotype News Letter

MONOTYPE HOUSE 43 FETTER LANE LONDON EC4 · SEPTEMBER 1961

Soldiers of lead - dismiss!

First filmset Urdu newspaper published by Javed Press

This illustration is a reproduction of a page from the 11th June 1961 issue of *Jang* – the leading Urdu newspaper and the one with the largest circulation of any vernacular newspaper in Pakistan – which was composed on a 'Monophoto' Filmsetter. The Javed Press of Karachi, printers and publishers of *Jang*, have received many letters of commendation from the public expressing appreciation for, as one writer puts it, "the magnificent step that has been taken by Javed Press in adopting this most modern method of printing".

To go straight into filmsetting, and thus bypass the three-dimensional cube of type and all that five centuries of the tradition of Gutenberg have stood for, has been quite a revolutionary move for the Javed Press. Until recently most of the text matter of *Jang* had been written by hand and printed by direct lithography. As several calligraphers were employed, each with a different "hand", the standard of lettering has been variable; and corrections have generally had to be made in the form of footnotes, whereas now a corrected line of film can be re-set.

One of the chief problems facing Mr. Khaleel-ur-Rahman, the editor and managing director

Figure 16. The front cover of *Monotype News Letter*, dated September 1961, featuring the front page of *Daily Jang*, composed on a Monotype Filmsetter. Private Collection.

Tamannai's Simplified Nasta'liq Type

Following unsuccessful attempts by Linotype and Monotype to promote simplified Naskh systems for Urdu, the demand for the Nasta'liq script in Urdu typography remained strong, highlighting its deep cultural resonance among readers. This preference posed significant challenges for Pakistani publishers such as Z. A. Tamannai, who contended that if Urdu typography was to progress, Urdu readers would need to adjust to slight modifications in letterforms for print compatibility:

> … if Urdu typography is to develop and succeed, Urdu readers will have to adjust their minds to modifications in the shape of the letters, for printing purpose. The printed types will have to be a little different from the letters in cursive writing to which they have been accustomed. Naskh had to and did, undergo such change in the course of the development of type printing … The type should be in Basic Nastaleeq, with its typical roundness and flourish. But slight deviation from the established rules of penmanship has to be accepted.[65]

From Script Reform to Typographic Realism: Tamannai's Vision for Nasta'liq

Tamannai's call for a "slight deviation" from conventional Nasta'liq reflects the larger dilemma faced by many Asian writing systems in adapting to modern typesetting technologies: balancing the authenticity of the script with the constraints of mechanical typesetting. His perspectives on Urdu printing, shared across various newspapers and journals, often echoed the sentiments expressed by advocates of the Arabic script reform, who viewed the script as a significant obstacle to progress and increase in literacy. For instance, Mirza Malkum Khan (1833–1908), a nineteenth-century Iranian diplomat and dedicated reformist, championed modifications to the script or even the adoption of the Latin alphabet to capitalize on Western technological advances, all while preserving "the integrity of Islam." Malkum Khan argued passionately:

> One word summarizes the deficiency and inadequacy in the education and upbringing of Muslim children: it is the alphabet. The ignorance and deprivation of the Muslim nation from present-day progress are due to the defectiveness of the alphabet. The weakness, incapacity, and poverty of Muslims stem from defectiveness of the alphabet. The absence of rights to freedom for the nation and the lack of security for life, honour, and property are due to the defectiveness of the alphabet. The ruin of roads, the abundance of tyranny and oppression, and the scarcity of justice and fairness among Muslims are all due to the defectiveness of the alphabet. In one word, the existence of a thousand types of detestable things is due to the defectiveness of the alphabet.[66]

While Malkum Khan's approach positioned the Arabic script in contrast to Western systems, Tamannai framed Urdu within the broader Arabic-script world. He noted that the Arab world and Iran had embraced the latest mechanical typesetting technologies, moving away from the "cumbersome" practice of handwritten printing—namely, lithography—deeming it inefficient. He used this stance to argue for the necessity of Urdu's transition from the Nasta'liq to the Naskh style, stating:

> This has been worrying all those interested in and associated with the progress of Urdu. It has been felt that, perhaps, the trouble lies in Urdu script—called Nastaleeq. If the Arabic form of—Naskh—were adopted for Urdu type, probably all the difficulties would be resolved.[67]

However, despite this suggestion, Tamannai understood Urdu readers' strong cultural attachment to Nasta'liq. His solution was to develop a version of Nasta'liq that embraced typographically simplified Naskh principles while preserving recognizable aspects of Urdu Nasta'liq. He argued that while the artistic nuances of Nasta'liq styles present certain challenges when adapting to standard mechanical forms, it is not an insurmountable task. Tamannai frequently reiterates that the advancement of Urdu typography depends on the readiness of Urdu readers to "adjust their minds to modifications in the shape of the letters, for printing purposes." These modifications would result in printed characters being "a little different" from their handwritten form, a crucial step towards modernizing Urdu typography.[68]

A Bid for Support:
Tamannai's Strategic Collaborations with Linotype and Monotype

Driven by ambition and aspirations of becoming a pioneer in the field of type-making, Tamannai embarked on a research journey in 1962 to explore the history of Urdu and Nasta'liq printing. Despite seeking financial backing from the Monotype Company for travels to the Netherlands, Germany, and England, his plea was rejected. Undeterred, Tamannai self-funded his research travel and while in England, he met with E. A. Firmage, the Overseas Manager of Monotype, to present his ambitious plans for designing a new Urdu Nasta'liq type—a project he estimated would require at least two years to complete.[69] However, Tamannai left the meeting feeling unfulfilled and unsupported, a sentiment at odds with the records in the Monotype Company archives (Figure 17).

Figure 17. Participants of the discussion "Publishing for Rural Areas" broadcast in the National Programme from AIR, Delhi. From left: Ratna Kapali (Chief of Product, Design and Presentation Section, Nepal), Z. A. Tamannai (Adviser, National Book Federation, Pakistan), Abul Hassan (Special Officer, Book Promotion, Ministry of Education) and Dr. Lok Nath Bhattacharya (Deputy Director, National Book Trust). From the journal *Akashvani*, No. 25, June 22–28, 1980. Page 7.

Evidently, Tamannai's proposal for Urdu Nasta'liq had aroused interest and curiosity, although the company was hesitant to enter into a formal agreement or finance his project. L. A. Collier, Monotype's Manager for the Eastern Area, recommended a cautious approach, advising:

> I do not suggest that we cold-shoulder Tamannai, but I would suggest the utmost discretion in handling him, if he turns up at Salfords. On no account should he be given any useful information of technical nature. I suggest polite, and non-committal, flattery as the best treatment for him.[70]

Rather than directly collaborating with Tamannai, Collier opted for an alternative strategy. He commissioned a calligrapher from Hyderabad, known as "home of Urdu design," to produce a suitable Nasta'liq design. Collier's plan was to acquire the design at a minimal cost, refine it in their Church Street facility, and then proceed with cutting it at Salfords, the company's manufacturing office in Surrey.[71] Despite these initial hesitations, Tamannai was advanced 500 rupees under a vague agreement to begin developing a font of Nasta'liq type for Monotype.[72] Additionally, he was granted access to Monotype's offset department in Karachi, along with the use of their equipment, films, and chemicals at the Company's expense.[73]

Unfulfilled by Monotype's limited engagement, Tamannai turned to Linotype, Monotype's rival company, where he found a more receptive partner. Upon reviewing Tamannai's proposal, in October 1962, Walter Tracy (1914–1995), Typeface Development Manager at Linotype & Machinery Ltd (L&M), offered him an advance payment of £100, with the stipulation that the type would remain exclusive to Linotype unless a different arrangement was agreed upon. Tamannai was also entrusted with the task of scrutinizing the proofs of characters, providing Linotype with detailed feedback on any necessary improvements or alterations to enhance the design. Furthermore, he was responsible for devising a keyboard scheme that met both the linguistic requirements of Urdu and the operational constraints of the Linotype machine.

For his contributions in advancing the project to a stage where the design was completed and approved by Linotype, Tamannai was promised a final sum of £500. In return, he would transfer all rights of the design to Linotype.[74] He accepted the offer in a letter dated 2 October 1962.[75]

Navigating Rivalries: Tamannai's Competitive Alliances

From his interactions with British firms, it is evident that Tamannai's involvement in the Urdu Nasta'liq projects was motivated not only by a passion for advancing Urdu typography but also by significant financial incentives. Despite the initial agreement with Linotype in 1962, Tamannai continued to solicit investment from other rival companies, as demonstrated by his letter dated 16 October 1963, to J. S. D'Souza,[76] Manager of Monotype Pakistan. In it, Tamannai stated, "I am sure and confident now my designs are up to the mark for mechanical composing. As Linotype and Intertype are both after it why not Monotype?"[77] He suggested that Monotype, with its distinct market position, could independently advance the project without direct competition.

Tamannai's dealings with Linotype became a point of contention when Collier, upon discovering his simultaneous negotiations with Monotype, criticized Tamannai's tactic of playing the companies against each other for personal gain. Collier questioned his expertise based on the designs presented, recalling Tamannai's assertion that his type design negated the need for kerning—a claim that wavered once Collier highlighted Monotype's capability to handle overhangs.[78] This incident further implied that Tamannai (even when his sentiments toward Monotype were largely positive) was considering the broader slug composing market, leaning toward Linotype and Intertype's hot-metal line-casting systems.

Tamannai's relations with Monotype became even more strained upon the publishing of his features in the *Morning News* of Karachi on 28 November 1963 and the *Daily Jang* on 19 December 1963. These articles heralded the advancements of his collaboration with Linotype as a pivotal transformation in Pakistan's printing industry. They commended Tamannai and Khalil-ur-Rahman for their efforts to design the Urdu type, and predicted that the two men, and even *Jang*, would be enshrined as pioneers in the Urdu Nasta'liq typesetting industry.[79] In response, Monotype felt compelled to issue an official statement to clarify their position:

> This Corporation [Monotype] has had this matter [Urdu Nasta'liq] very much in the forefront or their minds for many years. We have, in fact, been actually engaged in producing our own Nastalique design, under the guidance of a distinguished Urdu scholar, for over a year and we expect to make this available to newspaper publishers in Pakistan within a very short time … [this is mentioned] not to detract from Mr.

> Tamannai's efforts, but to point out that more than one firm in U.K. has taken an interest in the development of Urdu printing.[80]

Linotype Nastaliq (*Tamannai Script*)

By 1965, Tamannai's Urdu Nasta'liq type was completed and Linotype released it as "Linotype Nastaliq (Tamannai Script)." The type specimen showcased Nasta'liq matrices in two sizes, 12- and 14-point, and claimed that this type—a collaborative effort between Tamannai and Linotype—was lauded as a significant innovation for merging the distinctive characteristics of handwritten Nasta'liq with the mechanical composition requirements of the Linotype system.[81] Linotype also proceeded to file a patent for this type system, the subject of which was described as to provide means for reproducing a modified form of "Farsi" script (i.e. Persian, but in this case Nasta'liq), which is suitable for use in mechanical hot-metal or photographic composing machines.[82] Tamannai was credited as the inventor in this patent, and the details of his "invention" were outlined (Figure 18).

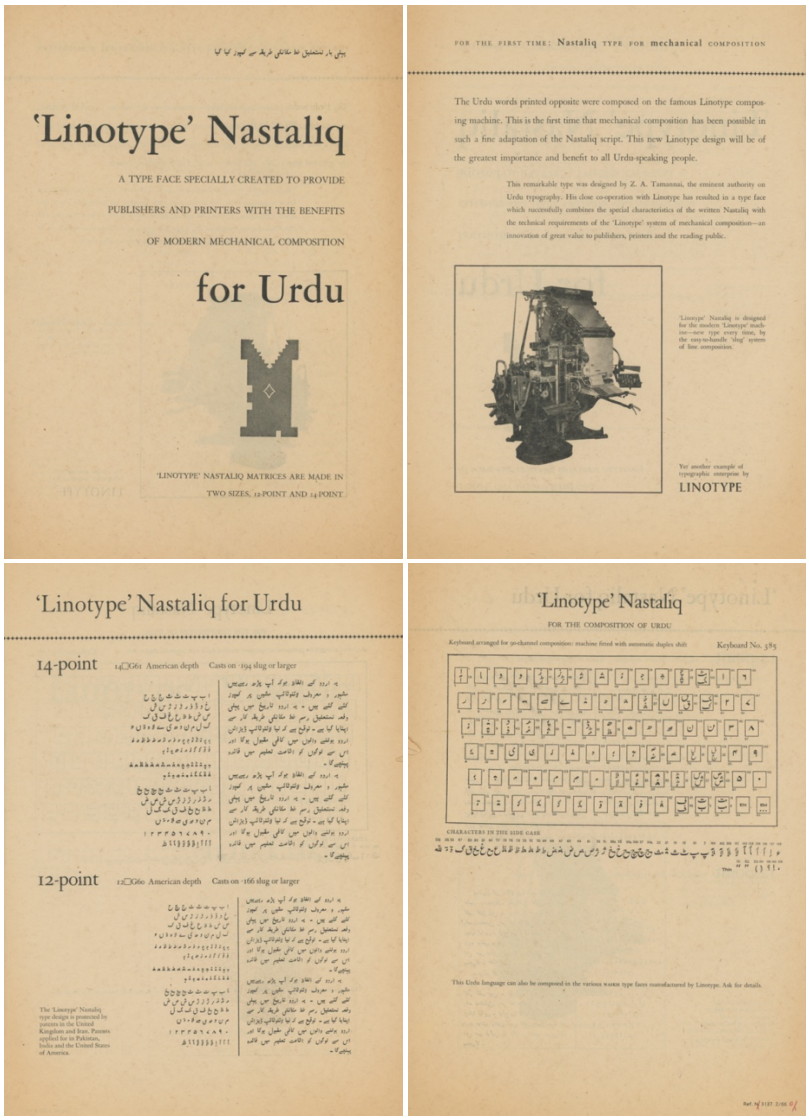


Figure 18. Type specimen of 'Linotype' Nastaliq (Tamannai Script). The Type Design Collection, University of Reading.

It is worth mentioning that the patent's illustrations, purportedly representing "written Nasta'liq with various alignments produced by this writing style," depict an abstracted version of Nasta'liq that does not fully capture the essence of its handwritten counterparts. This distinction becomes clear upon comparing the patent illustrations with specimens of Nasta'liq style, adhering to its established rules (Figure 19). The approach employed here reduced the required character count for Nasta'liq typesetting—from several hundred sorts found in hand-setting to fewer than two hundred. This aspect made the type compatible with the Linotype machine's capabilities, which featured a 90-channel keyboard. Linotype hailed this development as a pivotal moment in Urdu typography, stating:

> Most Urdu newspapers are … written by hand and printed lithographically. However, the people of Pakistan are very keen to take advantage of modern technical devices, and there is a strong desire amongst progressive-thinking printers for the opportunity to compose the Urdu language by mechanical means, together with a willingness to accept a degree of adaptation in the script in order to gain the benefits of mechanisation.[83]

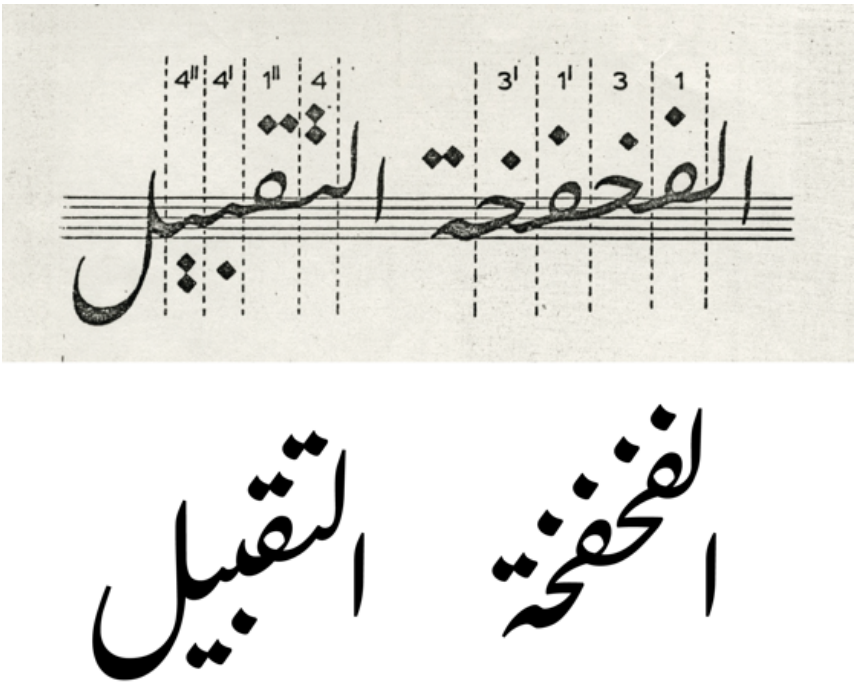


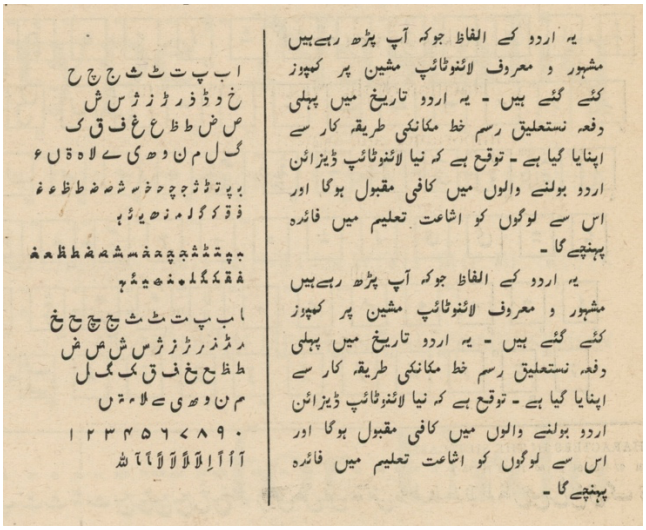
Figure 19. Nasta'liq words featured in Linotype and Tamannai's patent (top), described incorrectly as "an example of written Nastaliq, showing several alignments. The dotted lines indicate individual letters." Compare these words with the actual written composition of the same words (bottom), set in Gulzar Urdu Nasta'liq digital typeface (Google Fonts).

A Measured Success:
Reflections on Tamannai's Nasta'liq Type

Although Tamannai's Urdu type marked the first instance of the Nasta'liq style being mechanically composed using the Linotype line-casting machine, its achievement from a type design perspective is not as significant as it was advertised. A closer look at this type reveals that Tamannai merely applied principles of the simplified Naskh types for a "common base

alignment" to the Nasta'liq style. This method was notably applied to letters such as *mīm* and those sharing basic forms with *jīm*, which were designed in a linear format.[84]

As it was demonstrated in the context of earlier South Asian attempts, there were precedents for producing a linear version of the Nasta'liq style, notably by Abdus Sattar Siddiqi and Mirza Rafiq Beg.[85] Siddiqi's proposal, in particular, employed a simplification method strikingly similar to that of Tamannai, comprising 223 sorts.[86] Further diminishing the extent of Tamannai's individual contribution is a record from the Monotype Archives suggesting that the actual letterforms of this Urdu type were drawn by Manzurul Hasan, a calligrapher from Karachi, whose contribution went unacknowledged (Figure 20).[87]


یہ اردو کے الفاظ جوکہ آپ پڑھ رہے ہیں
مشہور و معروف لائنوٹائپ مشین پر کمپوز
کئے گئے ہیں - یہ اردو تاریخ میں پہلی
دفعہ نستعلیق رسم خط مکانکی طریقہ کار سے
اپنایا گیا ہے - توقع ہے کہ نیا لائنوٹائپ ڈیزائن
اردو بولنے والوں میں کافی مقبول ہوگا اور
اس سے لوگوں کو اشاعت تعلیم میں فائدہ
پہنچے گا -

یہ اردو کے الفاظ جوکہ آپ پڑھ رہے ہیں
مشہور و معروف لائنوٹائپ مشین پر کمپوز
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دفعہ نستعلیق رسم خط مکانکی طریقہ کار سے
اپنایا گیا ہے - توقع ہے کہ نیا لائنوٹائپ ڈیزائن
اردو بولنے والوں میں کافی مقبول ہوگا اور
اس سے لوگوں کو اشاعت تعلیم میں فائدہ
پہنچے گا -

Figure 20. Tamannai's 14-point Nasta'liq type from the type specimen, showing a linear version of the Nasta'liq style. The absence of kerning results in notably loose text spacing. The Type Design Collection, University of Reading.

Despite the uncertainties and unanswered questions about the project's authorship, Tamannai expressed satisfaction with his collaboration with Linotype. In a letter dated 20 March 1965 to Walter Tracy, he conveyed his gratitude for the support and kindness he had experienced, stating, "I cannot tell you how overwhelmed I feel on your kind treatment of me! It is really much more than I could have expected. My wife tells me I am fortunate to have such friends, and I too feel incredibly lucky."[88] However, despite the initial optimism and high expectations for Tamannai's Urdu Nasta'liq type system, it was only employed on an experimental basis and failed to achieve widespread adoption. Following this costly setback, Linotype did not undertake an Urdu Nasta'liq type-making project for the next two decades.

Lessons from Oversight

It is striking that, despite years of engagement with Arabic script, influential figures like Tracy often failed to develop a sufficient understanding of the principles of its writing styles and the significance of the reader preferences. Tracy's own writings demonstrate that he could not accurately distinguish between the written forms and the typographically simplified versions of Naskh and Nasta'liq styles. This is evident in his 1964 article, "The flourishing reed," where Tracy remarked:

> [Nasta'liq] is visibly different from Naskh. There is a distinct angle in such letters as elif and lam, and because the pen is cut and held in a special way there is

> considerable contrast between thick and thin strokes. But its important characteristic is that a word must be written from above to below an imaginary line according to very involved rules. As a consequence it is not easy to produce a satisfactory printing type … to some of us (whose judgments may be superficial but are certainly objective) the [Nasta'liq] letter forms seem indistinct and not so harmonious as in the Naskh script.[89]

Tracy's remarks, however, reflect an oversimplified view, which overlooks shared characteristics between Naskh and Nasta'liq styles. Features such as the angled orientation of vertical letters (e.g., *alif* and *lām*) and the marked contrast between thick and thin strokes are not unique to Nasta'liq. Depending on calligraphic style, intended text size, and application, they also present in Naskh. Both styles follow intricate rules for connecting letterforms, creating a cascading word structure that Tracy describes as unique to Nasta'liq but which is, in fact, also integral to Naskh (Figure 21). As such, Tracy's attempt at an "objective judgment" misses the underlying cultural and aesthetic nuances that guide reader preferences for these scripts.

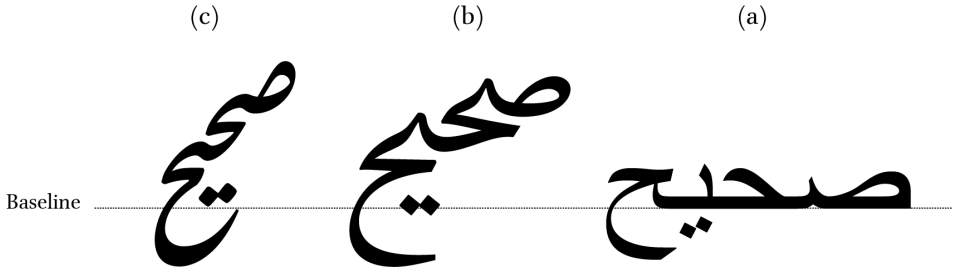


Figure 21. Comparison of the Arabic word *sahih* (correct) in its written and simplified versions. (a) Simplified Naskh featuring linear connections (set in Arial Arabic typeface). (b) Written version in the Naskh style. (c) Written version in the Nasta'liq style. Note that in both the Naskh and Nasta'liq written versions, the compositions are cascading and not linear. (Illustration designed by the author).

The Question of Ownership

The announcement of Linotype's Urdu Nasta'liq and its subsequent patent application raised concerns among Monotype managers. They believed that the payment of 500 rupees to Tamannai—a sum markedly less than Linotype's proposition—had guaranteed them exclusive rights to Tamannai's Nasta'liq type system.[90] However, Monotype's company records reveal that the agreement with Tamannai was loosely defined, structured as a payment for "personal services," and without a formalized contract.[91] Monotype managers grew increasingly concerned that Linotype's patent application, which broadly claimed ownership over an "invention," might restrict others from developing or using Nasta'liq type for Urdu, potentially granting Linotype a de facto monopoly over the Nasta'liq style itself.

This concern was not without precedent; the two British firms had previously navigated such legal complexities over patents for a Simplified Arabic type system by the Lebanese publisher, journalist, and writer Kamel Mrowa (1915–1966).[92] Owing to the popularity of Mrowa's system (exclusively given to Linotype), and demand for its availability on Monotype machines, Monotype sought a license from Linotype to offer the Simplified Arabic to its

Middle Eastern customers. In 1963, Linotype proposed granting Monotype a license for the use of simplified Arabic on hot-metal composing machines, but not for filmsetters—a condition that took Monotype by surprise and complicated promises made to customers about the availability of Simplified Arabic for newly ordered filmsetters (Figure 22).[93]

الحروف العربية المختصرة بنط ٩ ، ١٢ و ١٨ ديدو

يمكن الحصول على ثلاثة أحجام من الحروف العربية المختصرة (٩، ١٢، ١٨ بنط ديدو) من شركة لينوتيب آند مشينري ليمتد بواسطة وكلائها. جميع القوالب (الأمهات) لها حروف خفيفة وثقيلة (عادية وسوداء).

Trois Corps d'Arabe Simplifié

Trois corps d'Arabe Simplifié (9, 12 et 18 points Didot) sont dès maintenant chez Linotype & Machinery Limited à la disposition des agents autorisés. Toutes les matrices sont duplexées, avec caractères maigre et gras.

10◊E26 (9 pt. Didot)

لقد أجمع القائمون على شؤون الطباعة ان طريقة اللينوتيب هي أسرع الوسائل لجمع الحروف. وقد ترك اختراعها منذ سبعين عاما تغييرا شاملا في دور الطباعة في اكثر من نصف العالم، ولا يزال هذا التطور مستمرا في تحسين معدات الطباعة وابتكارها

لقد أجمع القائمون على شؤون الطباعة ان طريقة اللينوتيب هي أسرع الوسائل لجمع الحروف. وقد ترك اختراعها منذ سبعين عاما تغييرا شاملا في دور الطباعة في اكثر من نصف العالم، ولا يزال هذا التطور مستمرا في تحسين معدات الطباعة وابتكارها

14◊E24 (12 pt. Didot)

لقد اجمع القائمون على شؤون الطباعة ان طريقة اللينوتيب هي أسرع الوسائل لجمع الحروف. وقد ترك اختراعها منذ سبعين عاما في دور الطباعة في اكثر من

لقد اجمع القائمون على شؤون الطباعة ان طريقة اللينوتيب هي أسرع الوسائل لجمع الحروف. وقد ترك اختراعها منذ سبعين عاما في دور الطباعة في اكثر من

18◊E95 (18 pt. Didot)

لقد أجمع القائمون على شؤون الطباعة أن طريقة اللينوتيب هي أسرع الوسائل لجمع الحروف. وقد ترك اختراعها منذ سبعين عاما تغييراً شاملاً في دور الطباعة في أكثر من نصف

لقد أجمع القائمون على شؤون الطباعة أن طريقة اللينونيب هي أسرع الوسائل لجمع الحروف. وقد ترك اختراعها منذ سبعين عاما تغييراً شاملاً في دور الطباعة في أكثر من نصف

ISOLÉ FINAL MÉDIAL INITIAL

بببب

FINAL/ISOLÉ INITIAL/MÉDIAL

بب

L'avantage de l'Arabe Simplifié

La première ligne ci-contre montre les quatre formes de la lettre *ba* en typographie arabe habituelle. La seconde ligne représente comment deux formes de la lettre en Arabe Simplifié remplissent les mêmes fonctions.

مزايا الحروف العربية المختصرة

تبدو في السطر الاول اعلاه الاشكال الاربعة لحرف صبه في الطريقة التقيمة لصف الحروف العربية. ويتضح من السطر الثاني كيف يكفي شكلان فقط من أحرف المذكور لتأدية عين الاغراض في طريقة ممروه ـ لينوتيبه.

Figure 22. Mrowa-Linotype Simplified Arabic from the type specimen *L'Arabe Simplifié: Morwa-Linotype*. The Type Design Collection, University of Reading.

These legal and technical complexities not only hindered the progress of Middle Eastern clients' publishing activities, but also imposed significant cultural and financial burdens on them. Many were unable to afford investing in new composition machines or to transition from one system to another within a short timeframe. Moreover, the ethics of patenting a simplified Arabic type system was itself questionable, as the concepts behind it—reducing character sets and simplifying connections—were longstanding practices, rooted in historical Arabic-script adaptations for earlier technologies such as typewriters.

Indeed, in the specific instance of Mrowa-Linotype's Simplified Arabic, many of the principles employed were borrowed from their application in Arabic typewriters. Notably, the Lebanese patent for Mrowa's Simplified Arabic was itself produced using a typewriter that employed a simplified approach. Mrowa adapted typewriter models to suit a 90-button keyboard arrangement and the corresponding 90-channel magazine of the Linotype machine. This situation raises important questions about the veracity of Monotype and Linotype's attempts to broadly restrict an approach that heavily borrowed from, if not outright copied, earlier Arabic-script typographic models (Figure 23).

Figure 23. The patent (*bara'at al-ikhtira'*) of Kamel Mrowa's "new method for abridging and simplifying Arabic printing letters and their arrangement." Patented on 2 Mar 1959 by the Lebanese Patent Office. Courtesy of The Kamel Mrowa Foundation (www.kamelmrowa.com).

Monotype's Opposition to Linotype's Patent Application: A Fight for Urdu Nasta'liq

The Urdu Nasta'liq patent issue became particularly pressing for Monotype, as the company was concurrently developing its own simplified Nasta'liq type. An indignant internal letter—likely from E. A. Firmage to C. N. Fellows—expressed frustration over Linotype's patent, arguing that numerous contributors to Nasta'liq type had refrained from seeking patents out of respect for its cultural significance:

> I think Linotype are behaving in a crabby manner and not worthy of their good name … we would not dream of restricting the use of a system which will be of such tremendous benefit in education and culture in the Urdu speaking countries. We have never attempted to restrict any of our Scripts, and we would reasonably expect any other type composing firm or typefounder to be able to produce a Nastalique if they could get it drawn up, after we had launched ours … This is bear-faced hijacking and I am fighting mad … [it] would be better if they tear up both these Patents and behave a bit civilised![94]

Monotype's disappointment with Tamannai further deepened after his collaboration with Linotype became public. Seeking alternative expertise, Collier reached out to Ghiasuddin Khan, Director of Osmania University in Hyderabad, who recommended Khader Ali, a skilled calligrapher, for Monotype's Nasta'liq project. Monotype's single-type-casting machine had a

technical advantage over Linotype's line-casting machines in its ability to cast kerned characters, allowing a closer representation of the complex connections within Nasta'liq. However, Collier suggested downplaying the Indian origin of the project, writing:

> For political reasons, I would prefer no publicity to be given to the fact that our face was cut by an Indian. This is because one of the angles taken by Tamannai and Linotype is that their work is being done by a Pakistani. Urdu is, of course, the national language of Pakistan. Our man, Ghiasuddin khan is, however, a far better typographer than Tamannai.[95]

A Resolution and the Launch of Competing Nasta'liq Types

After months of negotiation, Monotype and Linotype reached a resolution in November 1964. Representatives from both companies acknowledged that Linotype's patent application was overly broad. To avoid a formal opposition, Linotype agreed to grant Monotype a complimentary license in England, Pakistan, and India upon the patent's approval. Both companies also agreed to release their Nasta'liq types in tandem, aiming for a September 1965 launch.[96]

Despite these agreements, the rivalry between Monotype and Linotype continued to overshadow the launch. Both companies underestimated the cultural attachment Urdu readers had to Nasta'liq's traditional aesthetic, resulting in types that failed to resonate with their intended audience. For example, *The Daily Jang* trialed Linotype's Nasta'liq type for a portion of its pages, but feedback from readers was mixed, leading the newspaper to discontinue its use.

The competition between Monotype and Linotype to dominate the Urdu market was packed with strategic oversights and their failure to appreciate the cultural significance of Urdu's visual representation to its readership. Neither the Linotype nor Monotype Urdu Nasta'liq projects managed to gain popularity among Urdu speakers and were seldom used. *The Daily Jang*, for instance, trialed Linotype's Nasta'liq type for a portion of its pages on an experimental basis, only to receive mixed feedback from its readers, leading to its eventual discontinuation.[97] This outcome underscores a key issue: it was the Urdu newspapers, rather than the typesetting machine manufacturers, that ultimately bore the brunt of these projects' failures, having staked their reputation and invested significantly in the success of the proposed Nasta'liq systems both culturally and financially.

Tamannai's Nasta'liq type and the Iranian initiative

In May 1976, Linotype was approached by Khosrow Za'imi (d. 2003), the Director General of the Association of Calligraphers in Iran. Following the formation of a government-backed (Ministry of Culture and Arts) committee tasked with adapting the Nasta'liq style into typesetting for printing purposes, Za'imi communicated the Iranian government's interest in collaborating with Linotype to develop a high-quality Nasta'liq type suitable for mechanical typesetting. He noted that Queen Farah Pahlavi herself had taken a personal interest in the project, underscoring its importance.[98]

Recalling his meeting with Za'imi, Tracy described his cautious decision to share a sample of Tamannai's Nasta'liq type:

> With no real hope that it would receive any sort of approval I showed Mr. Zaimi a proof of the synthetic Nastaliq type produced by Linotype & Machinary Ltd. [i.e.

> Tamannai's Nasta'liq type] some years ago for possible sale in Pakistan. To my surprise, Mr. Zaimi said that it was very good. He appeared to understand that it had been deliberately designed for one alignment only, and he gave me to understand that that principle would be acceptable.[99]

Encouraged by Za'imi's positive response, Linotype proceeded with the project and sought additional expertise from Kaykhosro Khoroush (b. 1941), an accomplished Iranian calligrapher. In September 1976, Khoroush traveled to London to collaborate with Tracy on the design of a high-quality, typographically viable version of Nasta'liq. Tracy was impressed by Khoroush's commitment and skill, later describing him as "the best person to undertake the task of designing a typographic version of the Nastaliq script of the highest quality."[100]

By October 1976, progress was being communicated regularly to Za'imi. Tracy sent Khoroush 250 sheets of paper for initial designs, along with an equivalent number of film sheets for creating final, inked versions.[101] Despite these efforts, by December 1976, Linotype's agent in Tehran, E. Gabrielian, reported that the preliminary designs had not met Za'imi's expectations.[102] The simplified, single-alignment approach, while technically feasible, diverged significantly from the principles of Nasta'liq style cherished by Iranian calligraphers and readers.

In a January 1977 response to Gabrielian, Tracy acknowledged the longstanding recognition by Iranian printers of the practical need for single-alignment Nasta'liq in print. However, he expressed doubts about the project's feasibility given the difficulties typographically representing the writing style. He noted:

> Mr. Zaimi should ask Professor Khorouche to tell him exactly how many characters would be needed … I believe that it will be found that the total runs to many hundreds, which would occupy a large number of grids in any phototypesetting system, with an unacceptable rate of output as the result.[103]

Despite the promising start and the involvement of high profile figures, the project ultimately did not advance, with the technological constraints proving too significant a barrier for acceptable Nasta'liq typesetting, mirroring the difficulties encountered in Pakistan.[104]

Monotype's Urdu projects

Contrary to the optimistic portrayal of "Monotype Pakistan: a success story"[105] by J. S. D'Souza, Monotype's Pakistan Manager, the company's initial efforts in Urdu typesetting were fraught with challenges, as they struggled to develop an effective Nasta'liq type or adapt their existing simplified Naskh types. Records in Monotype's archives reveal that as early as 1945—three years before the company established its Karachi branch—Monotype had created original artworks and pattern drawings for a Nasta'liq type intended for hot-metal composition.[106] However, this early experiment does not appear to have progressed beyond preliminary stages, likely hindered by the limitations of the 15 × 15 Matrix Case system, which constrained further development (Figure 24).

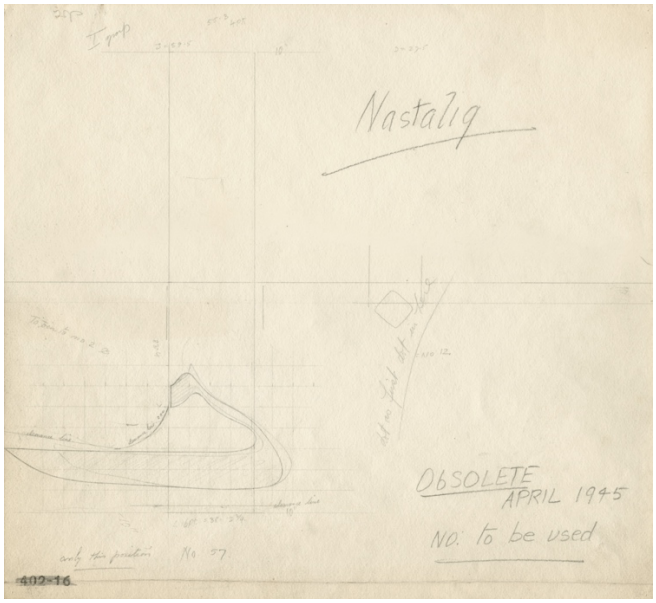


Figure 24. An example of Nasta'liq patter drawing for matrix production, dated April 1945. The Monotype Archives, Salfords.

In 1961, Monotype received a request from *Daily Nawa-i-Waqt*, a major Urdu newspaper in Lahore, for a Nasta'liq type compatible with phototypesetting. Although cautious about the project's feasibility—citing issues of achieving uniformity and adjusting designs to readers' preferences—Monotype eventually agreed to proceed.[107] This project held significant importance, as *Nawa-i-Waqt* had a large circulation and could potentially dominate the market "if they could obtain a Nasta'liq typeface."[108] The introduction of Nasta'liq typesetting—believed to be feasible with the Filmsetter's advantages—was expected to not only enhance Monotype's reputation but also open up new business opportunities in regions where Nasta'liq is used, including India, Iran, and Afghanistan.[109] Collier of Monotype also supported this project and highlighted that "if we can install a Monophoto Filmsetter there [in Karachi] I think that I can safely say that we shall have broken the back of opposition to the use of 'type' in Urdu Newspaper Composition in Pakistan."[110]

Around this time, Monotype briefly collaborated with Tamannai to develop a Nasta'liq type, but the partnership produced no lasting results. The company's subsequent project involved Ghiasuddin Khan and calligrapher Khader Ali from Bangalore, with Monotype offering a modest rate of 15 rupees per character—plus a bonus of 5 rupees if the design achieved an "illusion" of Nasta'liq style.[111] By May 1963, Collier reported that the new Nasta'liq type was nearly complete and ready for manufacture. Anticipating success, he expressed confidence that the type would meet the demands of Pakistani publishers.[112]

D'Souza emphasized the importance of completing the Nasta'liq type, especially as Urdu had been declared the official language of West Pakistan, leading to the formation of the Urdu Development Board in Lahore, with Tamannai as a member.[113] This urgency grew as Linotype advanced its competing Nasta'liq project with Tamannai, prompting Monotype to accelerate its own efforts. The project gathered momentum following a visit by Jack Matson, then Director of Monotype Corporation, to Pakistan in November 1963. During his visit, Matson met with Rahman of the *Daily Jang* to discuss the development of a new Urdu Nasta'liq type for use on the "Monophoto" mechanical filmsetter.[114]

The responsibility of finalizing the type was entrusted to the head of Monotype's Type Drawing Office, John Goulding, who was dispatched to Karachi with clear instructions to conduct the requisite research and gather necessary resources in order to swiftly complete the

work back in the UK.[115] However, it was considered crucial to ensure that no trade secrets were divulged to the Pakistani client, and precautions were taken to minimize "the danger of Goulding opening his typographical heart to Rahman on the spot, if there should be any question of duplicity."[116]

Striving for Authenticity

Upon reviewing proofs of the new Nasta'liq type, Rahman expressed satisfaction and urged Monotype to release the type concurrently with, or before, Linotype's version to maintain a competitive edge.[117] Goulding returned to the UK equipped with the necessary resources to manufacture the type for the Photo-Lettering method. By May 1964, a draft was dispatched to Pakistan for trial proofs, which received a positive response from Rahman.[118] Among the surviving artefacts from this period is a large inked-in Nasta'liq artwork stating that "This is the first sample of 'Monotype' Urdu Nastaliq." Dated January 1964, this specimen was intended for displaying a selection of trial letters and likely served as a reference in the Drawing Office (Figure 25).[119]

Figure 25. A large inked-in Urdu Nasta'liq artwork stating that "this is the first sample of 'Monotype' Urdu Nastaliq," dated January 1964. The Monotype Archives, Salfords.

Monotype's typesetting system had a technical advantage over Linotype's: it was capable of casting kerned characters and was not confined to a single horizontal alignment. This flexibility allowed Monotype to introduce "double alignment", optically speaking, "by using thick and thin joining strokes on various curves," enhancing the visual authenticity of Nasta'liq.[120] To ensure the superior quality of their Urdu Nasta'liq type over Linotype's, Monotype sought the expertise of Manzurul Hasan, the calligrapher who had reportedly contributed to Tamannai's type.[121]

Internal Debate and Cultural Disconnects

Despite the project's initial promise, conflicting feedback soon emerged. Collier relayed criticisms about the type's overly expanded look, even when considering wide word spacing, adding that "the design [produced in the UK] appears to be done by a beginner."[122] These discouraging reproaches led to a contemplation at Monotype's UK office over whether the entire type needed to be discarded. Moreover, the Drawing Office voiced concerns about the absence of Nasta'liq authorities within their team, highlighting significant challenges posed by their dependency on external critiques and recommendations for the type's development (Figure 26).[123]

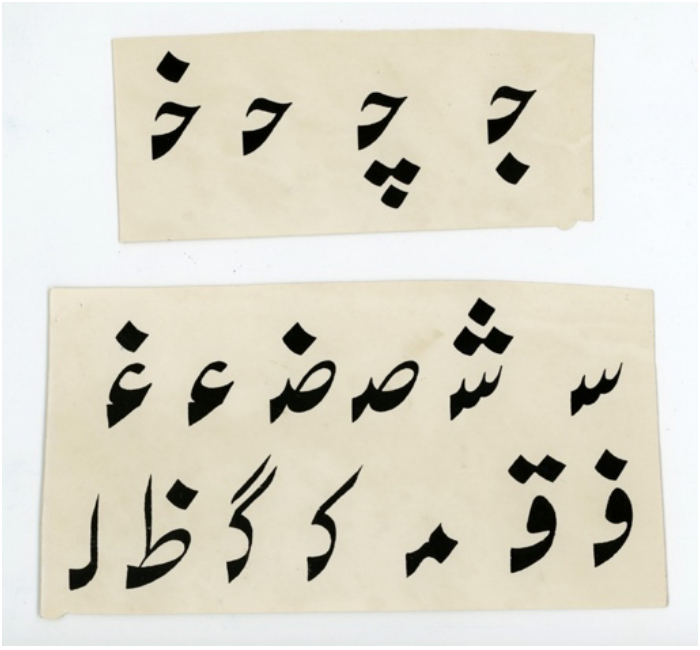


Figure 26. Proof of Monotype Nasta'liq project, featuring the initial form of various letters. The Monotype Archives, Salfords.

In an attempt to reconcile the contradictory views, Collier offered a somewhat perplexing explanation. He acknowledged the type's quality from nearly every aspect, praising Goulding's "creation" as both beautiful and legible. Collier projected that:

> I have no doubt that, a few years hence, it will be considered as, both a major achievement in the printing of Urdu, and, also, as very acceptable to the reading public. The trouble is that it is too good to meet public taste today, and I suspect that, together with being slightly lighter and extended than it should be, it is also not quite "crude" enough to suit public taste at the moment.[124]

Despite the mixed feedback, Collier maintained an optimistic stance regarding the future of the type, expressing confidence in its eventual success. He noted, somewhat self-referentially, that "one of the main troubles is that I am about the only person who combines most of the necessary range of knowledge to advise on the face, which makes it difficult to transfer to Salfords."[125] Additionally, Collier noted that critiques might stem from their resident calligrapher, particularly pointing out that Goulding had changed his design rather considerably, and conceded that there might be validity to the calligrapher's observations.[126]

In response to Collier's feedback, the Drawing Office, led by Goulding, articulated the practical difficulties in meeting the demands for calligraphic accuracy. They stressed the near impossibility of analyzing calligraphic samples to identify exact modifications required. Although aware of the significance of using the specific type of pen in Nasta'liq calligraphy, the team lamented the lack of skilled personnel capable of reproducing the script's distinctive stroke modulation and its other characteristics.[127]

The challenges identified by the Drawing Office underscored the essential characteristics of Nasta'liq that require significant expertise for accurate reproduction. For instance, when shaping Nasta'liq characters, the calligrapher must often rotate the reed pen and use different parts of its nib to create the thick and thin strokes that define letterforms. Such nuances posed substantial hurdles for the Drawing Office team, who were accustomed to the broad-nibbed traditions of Latin script and less familiar with the complex demands of Nasta'liq. These

critical nuances posed significant hurdles for the team at the Drawing Office, accustomed to the distinct broad nib calligraphic traditions of the Latin script rather than the intricacies of the Nasta'liq style (Figure 27).

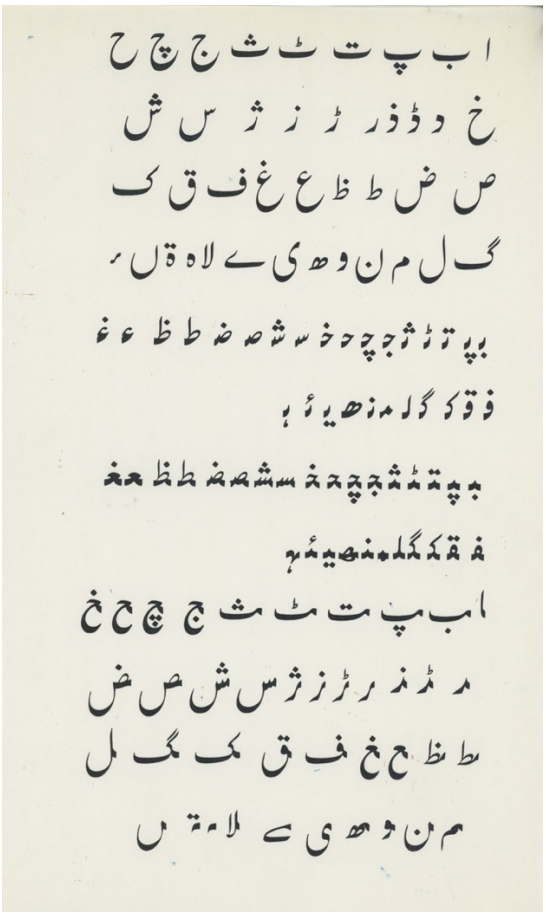


Figure 27. Proof of the complete character set of Monotype Nasta'liq project. The Monotype Archives, Salfords.

Strategic Shifts and Setbacks in Monotype's Nasta'liq Project

As Monotype continued to improve and refine the design of the type, Collier began to express doubts about its prospects. By August 1965, he shared his thoughts with Salfords office on the Urdu Nasta'liq type, admitting that, despite his hopes, simple and inexpensive alterations would not make the type wholly acceptable. Consequently, he suggested marketing the type under a different name, such as "Urdu Modern," believing it would appeal to Government Presses in Pakistan, particularly with the introduction of new filmsetting machines—a suggestion that did not gain traction. He candidly noted, "if we have 'bought a pup,' we should admit it as soon as we know it."[128] Nonetheless, Monotype's official stance attributed the type's shortcomings to the filmsetter's limitations.[129]

By June 1966, Monotype decided to put the project on hold, postponing any further work on the Nasta'liq type until it might be deemed necessary again. However, Efforts were renewed towards the end of 1969, this time with the involvement of H. A. Minai, a calligrapher working for the American Embassy in Karachi. In an attempt to propel these renewed endeavors forward, D'Souza convened a meeting in Karachi with representatives from twelve leading Urdu newspapers in January 1970. After extensive discussions, it was concluded to commission Minai to refine his previously initiated design to fit a 17 × 20 Matrix Case.[130]

Minai subsequently compiled a report on Nasta'liq typography, highlighting the linguistic prominence of Urdu as the world's third largest language, while lamenting its lack of a distinct typographic identity. To address the challenge of reducing the number of characters in a Nasta'liq type, Minai advocated for adopting 'straight line joints,' claiming this could be achieved without compromising the distinctive features of the Nasta'liq style.[131] He proposed a synthesis of simplified Naskh methods with Nasta'liq principles, suggesting the name "NASLEEQ" for this hybrid style—a curious proposition considering the term Nasta'liq itself merges Naskh and Ta'liq.

To achieve an authentic Urdu type comparable to hand calligraphy, Minai estimated at least 1,000 characters were needed. He stressed the requirement for a composing machine that supported at least nine distinct alignment zones to accommodate the varying heights of characters.[132] As such, Minai anticipated that this complexity would result in slower composing speeds and require more space than traditional methods. Yet again, and perhaps now, unsurprisingly, the project was ultimately considered impractical—owing to challenges such as the extensive software coding it would necessitate—marking yet another ambitious, unrealized attempt in the quest to digitalize the Nasta'liq style (Figure 28).

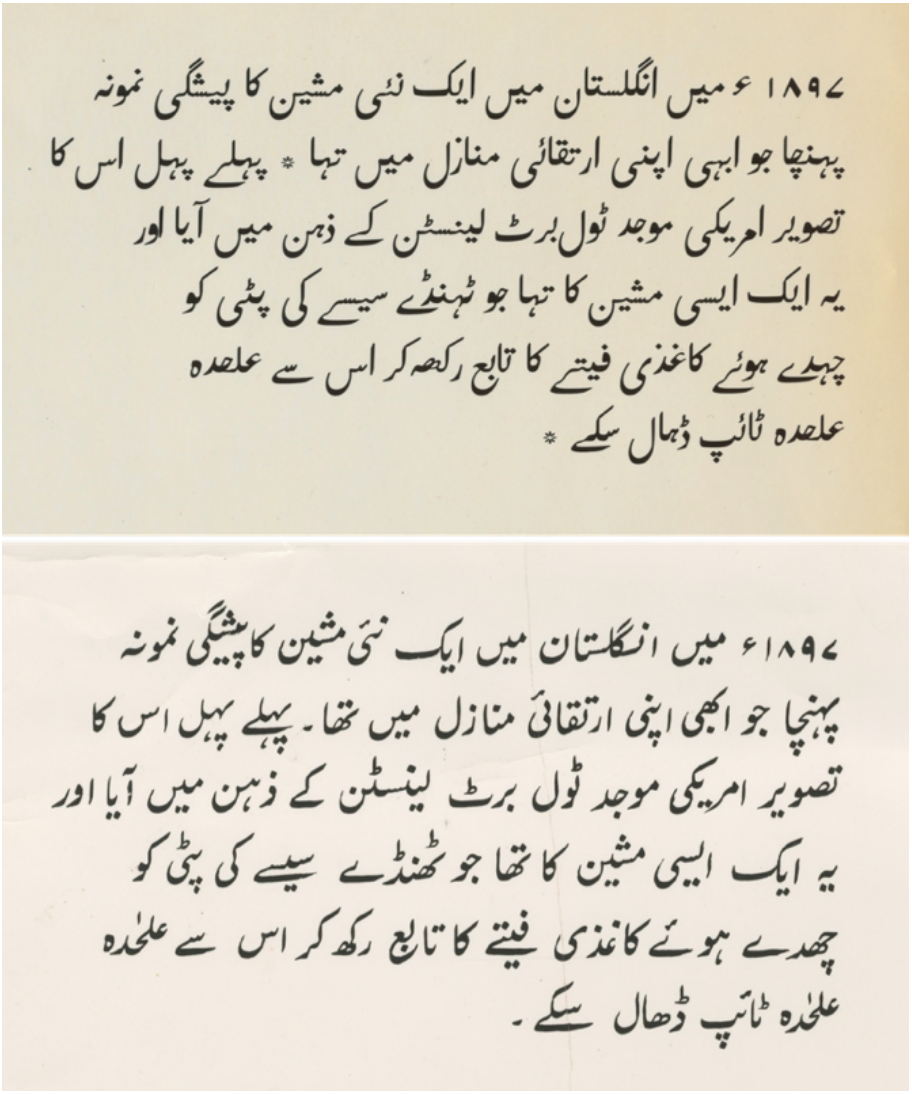


Figure 28. A proof of a later experimental Nasta'liq project by Monotype, circa 1975, featuring some contextual alternates and allowing double alignment, recorded in some documents as Tabassum. The Monotype Archives, Salfords.

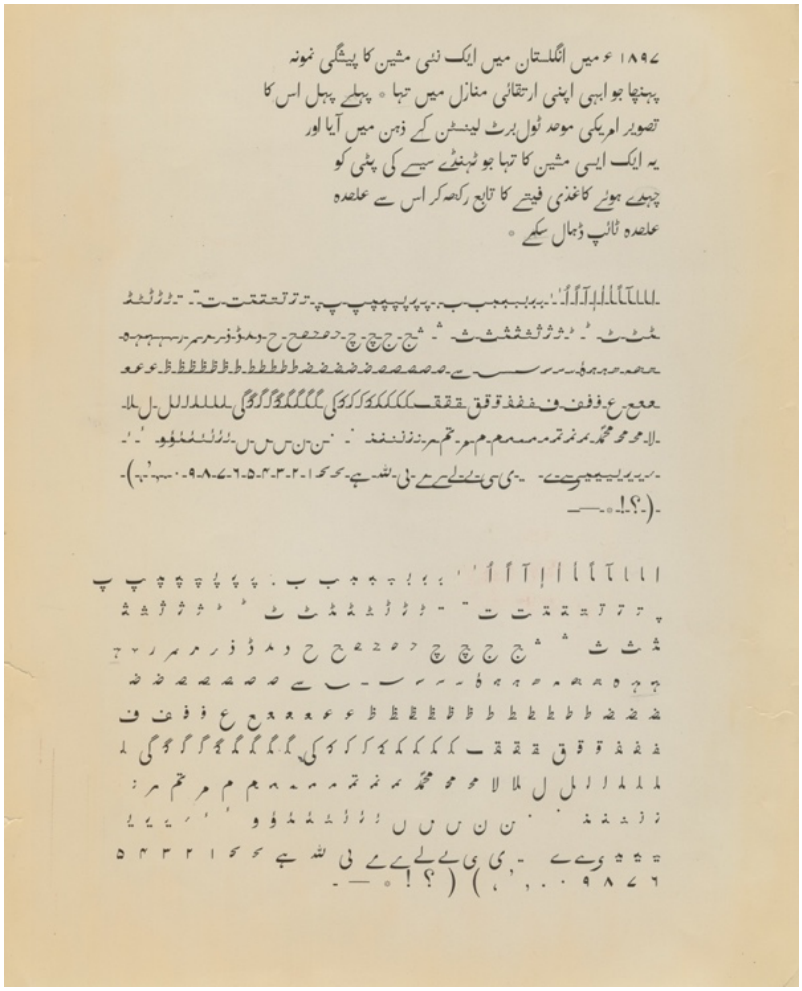


Figure 29. A proof of a later experimental Nasta'liq project by Monotype, circa 1975, featuring some contextual alternates and allowing double alignment, recorded in some documents as Tabassum. The Monotype Archives, Salfords.

Reflections on Monotype's Nasta'liq Projects

This situation highlights a persistent shortcoming in the strategies employed by major companies like Linotype and Monotype in designing and producing types for Asian languages and writing systems. These companies maintained strict control over the production process, prioritizing in-house expertise and confidentiality over collaborating with, or potentially training, specialists from India or Pakistan. By focusing on safeguarding proprietary techniques and trade secrets, they often compromised the cultural accuracy and visual authenticity of the types.

In Monotype's Urdu Nasta'liq projects, for example, initial sketches were prepared locally in Bangalore, allowing for some input from regional experts. However, the final stages of production were completed in the UK, without the involvement specialists in Urdu nor Nasta'liq. This approach left Monotype's Drawing Office responsible for converting Nasta'liq letterforms into pattern drawings—a task they could technically execute with precision but lacked the specific tools and sensitivities inherent to Nasta'liq style. The tools and methods used by Monotype's team, trained primarily in Latin script traditions, differed significantly from those required to capture the nuanced flow and modulation of Nasta'liq strokes.

This disconnect was particularly evident in the final results, which produced Nasta'liq characters that appeared somewhat "machine-made," lacking the organic quality of

handwritten forms to which Indian and Pakistani clients were accustomed. Collier's observation that Goulding's drawings might be "too good to meet public taste today" alludes to this transformation, where the polished but rigid aesthetic departed from the expectations of Urdu Nasta'liq's readership (Figure 28).[133]

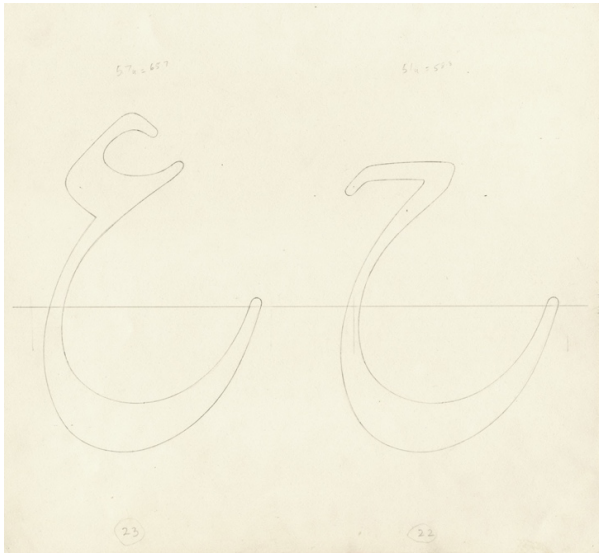


Figure 28. An example of pencil pattern drawing for matrix making, featuring the isolated forms of the letters *'ain* and *baṛī ḥe*. Compared to the calligraphic forms produced by a reed pen, the letters in this drawing appear somewhat machine-made. The Monotype Archives, Salfords.

The first digital Nasta'liq typeface

The advent of digital technology offered a transformative solution for the typesetting of Nasta'liq, particularly for Urdu. In contrast to Arabic and Persian, Urdu incorporates distinct letterforms, such as the *baṛī ye* (ے, /eː/ /ɛː/), which is integral to its script but presents unique kerning and alignment challenges due to its "returning" (*ma'kus*) shape, which disrupts the natural right-to-left flow of text. During the era of metal type, typesetters could mitigate these issues by manually adjusting dots as needed, but digital typesetting required an automated system to handle such complexities (Figure 31).[134]

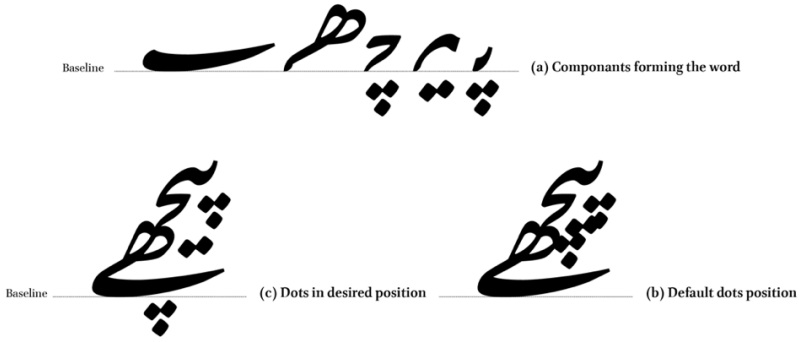


Figure 31. (a) Individual letters forming the Urdu word *pichhe*, from left to right: initial *pe*, medial *ye*, medial *jīm*, medial *do-cashmī he*, and final *baṛī ye*, with dots in their default positions. (b) Composed form of the word *pichhe* showing dots clashes. (b) Composed form of the word *pichhe* with dots adjusted to avoid clashing. (Illustration designed by the author).

Against this backdrop, Pakistani scholar Matlubul Hasan Saiyid proposed a groundbreaking solution to Monotype in the late 1970s. Recognizing the potential of Monotype's Lasercomp digital typesetting machine, Saiyid and Ahmad Mirza Jamil of Elite Publisher Ltd., Karachi, envisioned a digital Nasta'liq typeface that could overcome the limitations of both lithographic and mechanical typesetting. This proposal attracted the interest of *Daily Jang*, one of Pakistan's leading Urdu newspapers, which became the primary client for this pioneering project.[135]

The proposed typeface aimed to imitate the handwritten Urdu Nasta'liq style, previously produced lithographically at *Daily Jang*. The approach taken to achieve this task involved not just designing the single letterforms, but sequences of up to eight letters (words or word-segments) as single glyphs. This strategy was only made feasible by the advancements in digital typesetting, which could handle much larger character sets than were manageable with hot-metal typesetting machines. Coupled with this was Monotype digitization of characters which "preserved all the fine sensitive artistry of the calligraphers' work,"[136] and the possibility storing large numbers of characters by computer—a previously unattainable feat (Figure 32).[137]

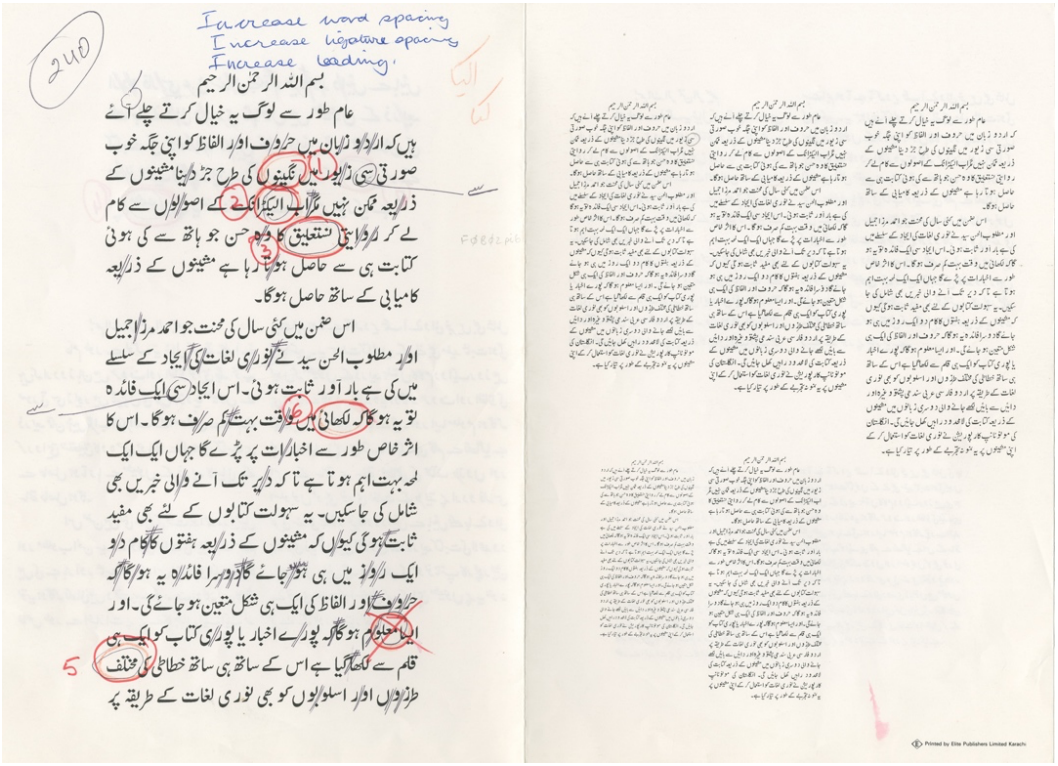


Figure 32. An early proof of Noori Nastaliq. The Monotype Archives, Salfords.

Initial assessments suggested the font would contain approximately 20,000 glyphs. To realize this ambitious project, Monotype's Graham Sheppard was sent to Karachi to supervise the production of film patterns for digital conversion. Aided by Mirza Jamil, a calligrapher with appropriate knowledge of Urdu Nasta'liq, the duo undertook the task of preparing 20,000 drawings. The objective was to transcribe every conceivable combination of letters in the Urdu language. These drawings—along with the corresponding code strings defining the letter order—were sent to the digitization office in Salfords. There, a rotary scanner was used to digitize the artwork, processing each piece in about two minutes (Figure 33).[138]

Figure 33. Specimen of Noori Nastaliq typeface, printed by Elite Publisher Limited in Karachi. The Type Design Collection, University of Reading.

As documented in the *Monotype Recorder*, the entire process—encompassing production, assembly, and software development—was completed in just seven months. The type specimen recorded that:

> Since 1743 the classical elegant Nastaliq script has been defying the experts in their efforts to bring it in line with fast moving technology… This invention [Noori Nastaliq] has in one single leap taken the Urdu Language from the depth of medieval age to the heights of most advanced electronic and laser technology of our times … Undoubtedly this system of computerised calligraphy, in view of its fascinating type and fantastic speed is destined to play a revolutionary part in the development of Urdu Language. A Lahore Urdu daily composed in Noori Nastaliq is being published from 1st October, 1981 which is the first manifestation of this dynamic invention.[139]

The resulting Noori Nastaliq typeface was hailed as "Monotype's greatest exotic language triumph." It marked one of the few original typefaces Monotype developed in the era of digital phototypesetting. The introduction of Noori Nastaliq, the first digital typeface for Nasta'liq and a notable improvement in imitation of Urdu Nasta'liq for twentieth-century print production, underscores the project's significance and the extensive effort invested in its development.[140]

This type remains widely popular for typesetting Urdu, and constitutes the first success in typographically representing the Urdu Nasta'liq digitally (Figure 34).[141]

Figure 34. Full-page announcements of Monotype Lasercomp machine and Noori Nastaliq typeface, futured in the *Daily Jang*, dated 1 October 1981. The Type Design Collection, University of Reading.

Conclusion

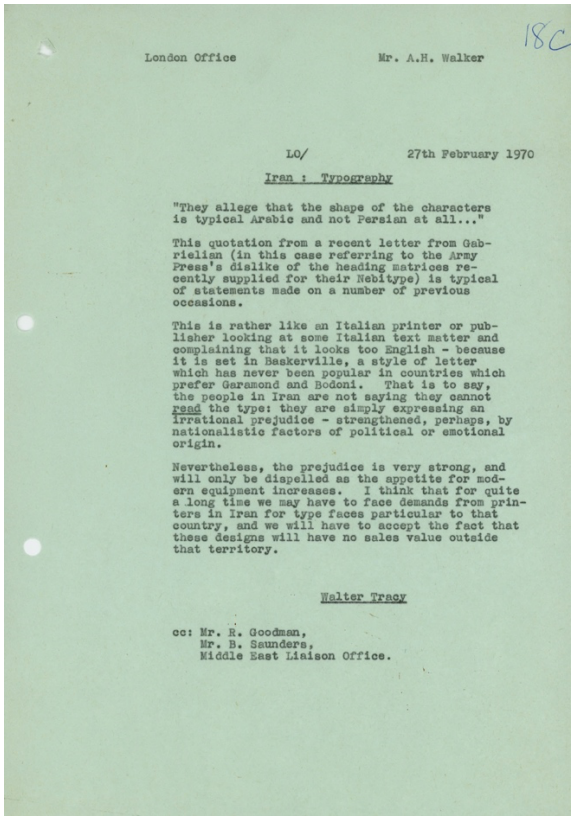
This article has traced the complex path of efforts to adapt Urdu Nasta'liq for mechanical composition and modern typesetting technologies throughout the twentieth century. It has demonstrated how substantial investments by key players—including the Nizam's Government, major Urdu newspapers, and companies like Linotype and Monotype—repeatedly failed to produce lasting and widely adopted solutions. A sentiment captured by Monotype's Collier, in 1963, seemed to foreshadow this outcome, as he noted:

> I confirm that it is felt that it is impossible to achieve a 'pure' Nastalique fount suitable for automatic composition on existing Type Composing Machinery. We shall be well content if we can achieve an "illusion" of such face.[142]

This study has highlighted a prevailing corporate strategy among Linotype and Monotype, which prioritized machinery sales over the development of types tailored to regional languages like Persian and Urdu, which were considered to have a limited, regional demand. When confronted with resistance, these companies often dismissed clients' legitimate concerns as bias or ignorance, rather than addressing potential impacts on their profit margins.

An illustrative example of this attitude is revealed in a 1970 correspondence between Walter Tracy of Linotype and the company's representative in the Middle East, regarding an Iranian newspaper's request for an original type, specifically for the Persian language. Tracy's response to the Iranian client's reluctance to adopt the available simplified Arabic types demonstrates a clear insensitivity towards the stylistic and linguistic preferences of Persian speakers (Figure 35). Tracy remarked, "they allege that the shape of characters is typical Arabic and not Persian at all." He further argued:

> This is rather like an Italian printer or publisher looking at some Italian text matter and complaining that it looks too English—because it is set in Baskerville, a style of letter which has never been popular in countries which prefer Garamond and Bodoni. This is to say, the people in Iran are not saying they cannot read the type: they are simply expressing an irrational prejudice—strengthened, perhaps, by nationalistic factors of political or emotional origins.[143]



18c

London Office Mr. A.H. Walker

LO/ 27th February 1970

Iran : Typography

"They allege that the shape of the characters is typical Arabic and not Persian at all..."

This quotation from a recent letter from Gabrielian (in this case referring to the Army Press's dislike of the heading matrices recently supplied for their Nebitype) is typical of statements made on a number of previous occasions.

This is rather like an Italian printer or publisher looking at some Italian text matter and complaining that it looks too English - because it is set in Baskerville, a style of letter which has never been popular in countries which prefer Garamond and Bodoni. That is to say, the people in Iran are not saying they cannot read the type: they are simply expressing an irrational prejudice - strengthened, perhaps, by nationalistic factors of political or emotional origin.

Nevertheless, the prejudice is very strong, and will only be dispelled as the appetite for modern equipment increases. I think that for quite a long time we may have to face demands from printers in Iran for type faces particular to that country, and we will have to accept the fact that these designs will have no sales value outside that territory.

Walter Tracy

cc: Mr. R. Goodman,
Mr. B. Saunders,
Middle East Liaison Office.

Figure 35. A letter from Walter Tracy to Arthur Henry Walker, Letter, "Iran: Typography," 27 February 1970, WT correspondence, folder 18c Persian and Pushto. The Type Design Collection, University of Reading.

Tracy's analogy, however, falls short in acknowledging the structural and fundamental distinctions between writing styles across different language communities and regions of Arabic-script world, which are far more significant than the aesthetic variations between Roman types he mentions. The core of Tracy's frustration becomes clear in his concluding remarks, where he admits:

> The prejudice is very strong, and will only be dispelled as the appetite for modern equipment increases. I think that for quite a long time we may have to face demands from printers in Iran for type faces particular to that country, and we will have to accept the fact that these designs will have no sales value outside that territory.[144]

This dismissal of clients' preferences was not exclusive to Linotype or to Persian typesetting. Collier of Monotype expressed similar sentiments regarding the adaptation of their Naskh types for Urdu, focusing on what he perceived as minor design adjustments to suit contemporary tastes without altering the basic system or design. Collier drew parallels with a

hypothetical situation, which could occur, whereby Monotype's Poliphlus Face might be popular in Germany, but that Times New Roman or Gill Sans would be preferred in England.

The above narratives highlight a broader matter within the printing and typography industry, especially at a time when the impact of typeface selection on newspaper production costs—such as the cost implications of a typeface's width—was well understood within the context of Western European newspaper publishing. Yet, the economic impracticality of simplified types, along with stylistic and cultural concerns, were considered excessive when voiced by Asian clients. This study also underscores the recurrent oversight by Western typographic firms and tech giants in gauging the depth of their clients' and readers' apprehensions about the misrepresentation of their writing systems.

These companies often exhibited an unwarranted optimism about the acceptance of their proposed systems, particularly in the Urdu context, and promoted the supposed advantages of simplified systems, which ultimately failed to resonate with readers. Despite prolonged attempts and significant financial outlays, it was not until the introduction of Noori Nastaliq typeface in 1981 that a significant breakthrough occurred. A critical element of this success was the direct involvement of language experts, "the close cooperation of the calligraphic language experts from Pakistan,"[145] and the minimal distortion of the original design, an aspect that had previously condemned similar endeavors.

In the absence of culturally appropriate alternatives, Arabic and Persian-speaking communities eventually adopted simplified Naskh-based types, initially developed for hot-metal typesetting machines. This shift resulted in a profound and enduring erosion in the authenticity and aesthetic appeal of printed characters within their writing styles. This phenomenon, however, was not entirely replicated amongst other language groups, particularly Urdu, which with insisting on using Nasta'liq has persistently maintained its visual identity. This dedication has come at a cost, resulting in a restricted range of typographic options and limited representation on digital platforms even to this day (Figure 36).

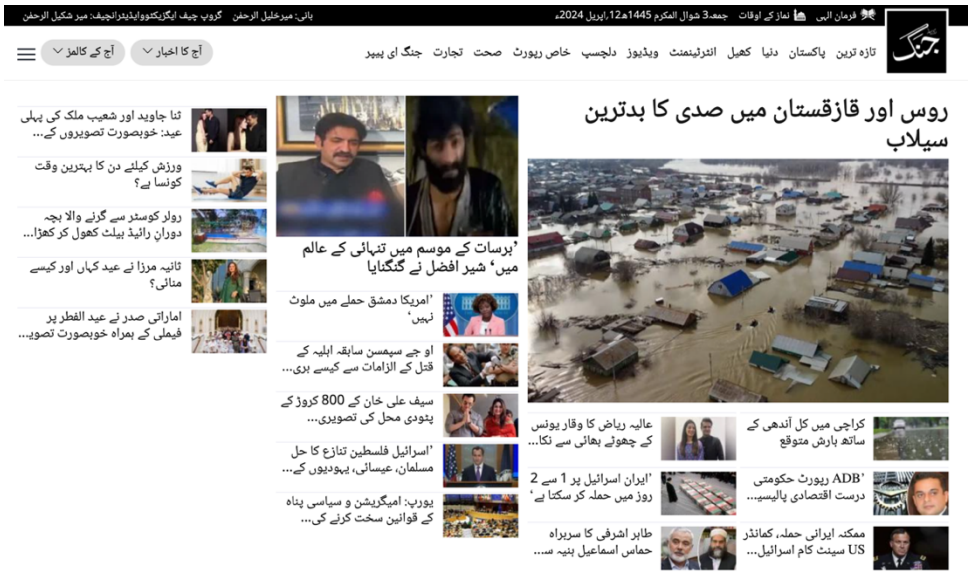


Figure 36. The *Daily Jang* website (12 April 2024), featuring the simplified Naskh typeface Noto Naskh Arabic.

Despite technological advancements that have eliminated many earlier constraints, the typographic needs of diverse language communities are still often overlooked in favor of economic and political priorities. Corporate practices continue to enforce Latin-based

typographic standards on a global scale, disregarding the unique requirements of other writing systems. This approach has led to the modification of writing styles to fit a constrained view of typographic modernity, the supremacy of Latin stylistic and aesthetic norms, deficiencies in typesetting and font technology, and an inadequate acknowledgment of typography's role in addressing complex issues of representation and control.

Today, only a handful of partially functional OpenType Nastaʻliq typefaces are available for Urdu,[146] the world's tenth most widely spoken language, with over 230 million speakers.[147] While the scarcity of typefaces is often attributed to the perceived complexities of the Nastaʻliq style, many limitations stem from font technology shortfalls, inadequate digital platform support, and a lack of investment and understanding of Nastaʻliq principles by designers and engineers.

By highlighting the historical questions surrounding the typographic representation of languages like Urdu, this article demonstrates that, without substantial support from the industry, pioneering typographic solutions often go underutilized, failing to reach the audiences they could serve. This underscores the need for the design and technology sectors to recognize their social responsibility in creating inclusive communication tools and to approach typographically underrepresented languages with the same rigor, sensitivity, and investment afforded to widely used scripts.

Notes

I extend my deepest gratitude to all who contributed to the development of this article. My heartfelt thanks go to Erin Piñon, whose insightful readings of multiple drafts, thoughtful suggestions, and engaging discussions were invaluable to shaping my arguments. I am also grateful to the Monotype Archives in Salfords, as well as the Type Design Collection in the Department of Typography and Graphic Communication at the University of Reading. I am indebted to my anonymous reviewers for their constructive feedback, which significantly strengthened this work. Finally, my sincere thanks are due to the editors of Book History, especially Beth le Roux, for their support and bringing this article to publication. Unless otherwise noted, all translations are provided by the author.

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[1]. Nastaʻliq is a writing style that gradually evolved from the second half of the fourteenth century in Persian-speaking regions and was later adopted by other language communities, including Arabic, Turkish, and Urdu. For a general introduction to Arabic script writing styles in English, see Annemarie Schimmel, *Islamic calligraphy* (Leiden: E. J. Brill, 1970); Yasin Hamid Safadi, *Islamic calligraphy* (London: Thames and Hudson, 1978); Sheila Blair, *Islamic calligraphy* (Edinburgh: Edinburgh University Press, 2006); and Maryam Ekhtiar, *How to read Islamic calligraphy* (New York: The Metropolitan Museum of Art, 2018).

The term Nastaʻliq (also referred to as Naskhi-Taʻliq) is thought to represent a fusion of Naskh and Taʻliq, and this etymology suggests two possible origins: it either emerged through the integration of Naskh and Taʻliq, or it has rendered Taʻliq obsolete. See Qazi Ahmad ibn Mir-Munshi, *Calligraphers and painters: a treatise by Qāḍī Aḥmad, son of Mīr-Munshī* (circa A.H.1015/A.D.1606), Translated by Vladimir Minorsky (Washington: The Lord Baltimore Press, Inc., 1959), 116, footnote 377.

[2]. Urdu is one of several South Asian languages, including Kashmiri, Punjabi, Pashto, and Sindhi, that utilises a modified form of the Arabic script, also known as the Perso-Arabic script.

[3]. For an in-depth account of earliest attempts to design and develop Nastaʻliq types in Europe see Borna Izadpanah, "Early Persian Printing and Typefounding in Europe," *Journal of the Printing Historical Society*, no. 29 (2018): 87–123.

[4]. Zubair Ahmed Tamannai, "Urdu Typography: A Problem?" Reprinted from *Unesco Information Bulletin on Reading Materials* 5, no. 1 (April 1963): 1.

[5]. Hot-metal refers to the mechanical method of composing and casting individual sorts or lines of type using a typesetting machine, typically operated by a keyboard, in contrast to traditional foundry types that required casting individual sorts for hand composition. Phototypesetting is a method that employs photography to produce columns of type on a scroll of photographic paper.

[6]. Although in handwriting the Latin script is often written in a joining manner to facilitate continuous writing, Gutenberg used the "blackletter" manuscripts as a model which, with minor modifications, could be reproduced in a non-joining manner.

[7]. In this article, the term "simplified" is used to describe approaches that aim to minimise the requirement for multiple contextual letter variants, typically reducing them to a single or smallest number of forms in their initial, medial, and final positions within words or word segments (see Figure 2). "Linear," on the other hand, refers to the efforts made to convert the intricate, multi-level connections (cascading or descending) characteristic typical of Arabic-script writing styles into a single-line or linear horizontal alignment along the baseline or *kursi* (see Figure 3). A prominent example of such adaptation occurred with the modification of the Arabic script for use in typewriters during the twentieth century. This adaptation faced significant challenges, not only regarding the limited character repertoires available but also in terms of the constraints imposed by typewriter keyboard layouts.

[8]. See Izadpanah, "Early Persian Printing."

[9]. Reflecting on his typographic endeavours after returning to England in 1786, Wilkins shared informative insights in the preface to the 1806 publication of *A Dictionary, Persian, Arabic, and English*. This work was printed using Naskh types he had developed in collaboration with Birmingham-based typefounder William Martin (1757–1830). Wilkins noted:

> "For my copy, I preferred the form which is called نسخ [Naskh], because of its regularity and plainness … it is, in my humble opinion, the only form which should be used for printing … Many attempts have been made, to imitate the mode of writing practiced by the Persians, commonly called نستعلیق [Nasta'liq]; but though I myself set the example, I am obliged to confess that the irregularity and extreme delicacy of that mode of writing are such, that it cannot be successfully imitated."

See John Richardson and Charles Wilkins, *A Dictionary, Persian, Arabic, and English; with a Dissertation on the Languages, Literature, and Manners of Eastern Nations, by John Richardson … A New Edition with Numerous Additions and Improvements, by Charles Wilkins* (London: Printed by William Bulmer and Co., 1806), xcv.

[10]. Lithography was invented in the late eighteenth century by German author and playwright Alois Senefelder (1771–1834). For an overview of early lithography, see Michael Twyman, *Early Lithographed Books: A Study of the Design and Production of Improper Books in the Age of the Hand Press, with a Catalogue* (London: Farrand Press & Private Libraries Association, 1990).

[11]. For an overview of the history of lithography in Iran and India, see Olimpiada P. Shcheglova's entries, "Lithography ii. in India" and "Lithography ii. in Persia," in *Encyclopædia Iranica* (online edition), available at https://www.iranicaonline.org/articles/lithography-ii-in-india and https://www.iranicaonline.org/articles/lithography-i-in-persia (accessed 18 April 2024).

[12]. Tariq 'Aziz, *Urdu Rasm-ul-Khat aur Ta'ip* (Islamabad: Muqtadirah Qaumi Zaban, 1986), 206.

For a deeper insights into the stylistic distinctions and regional variations of Naskh types—including the "Turkish" type featured in the first issue of *al-Hilal*, crafted by Ohannes Mühendisyan (1810–91), an Armenian punchcutter from Istanbul—consult the book chapters "Persian and Arabic Printing with Movable Type in Qajar Iran (1818–1900)" by Borna Izadpanah and "The Genealogy of Ottoman Naskh Printing Types (1729 to 1928)" by Onur Yazıcıgil in *Arabic Typography: History and Practice*, edited by Titus Nemeth (Salenstein: Niggli, 2023), 75–153 & 155–227.

These recent studies provide a detailed analysis of the nineteenth-century Ottoman and Persian Naskh types produced in Istanbul, Tabriz, and Tehran, shedding light on the stylistic preferences and regional variations within these traditions. Due to the historical and cultural connections between Persian and Urdu in South Asia, Persian Naskh types would likely have been better suited to Urdu typography than Ottoman Naskh examples. However, by the time *al-Hilal* was being published, the Persian Naskh types developed in Iran during the nineteenth century were not commercially available.

[13]. ʻAziz, *Urdu Rasm-ul-Khat*, 209.

[14]. ʻAziz, *Urdu Rasm-ul-Khat*, 210.

[15]. Hydari, also known as *Sadr ul-Maham*, later served as the Prime Minister of Hyderabad State from 18 March 1937 to September 1941.

[16]. It is suggested that during this period, only two locations in India, the Baptist Mission Press in Kolkata and the Gujarati Type Foundry in Bombay, had access to Nastaʻliq types. See "Urdu Printing in India: New Nastaliq Type Evolved (from Our Indian Correspondent)," *British and Colonial Printer and Stationer* 107 (1930): 690.

There is mention of another Nastaʻliq type belonging to Punjab Economical Press in Lahore which was used in 1906 for a publication entitled *English Idioms*, although I have not been able to locate this work. See Mirza Rafiq Beg, "Nastaʻliq Ta'ip," *Urdu* 9, no. 33 (1929): 96.

[17]. Harun Shirvani, *Urdu Rasm-i Khat aur Tabaʻat* (Hyderabad: Mahtamam Matbuʻat, 1957), 19.

[18]. Muhammad Habibullah Rushdi, "Urdu Nastaʻliq aur Ta'ip," in *Urdu Ta'ip aur Ta'ipkari: Muntakhab Maqalat*, ed. ʻAli Haidar Malik (Islamabad: Muqtadirah-yi Qaumi Zaban, 1989), 25.

[19]. Syed Abdul Karim Husaini, had spent a considerable period in Egypt acquiring specialised education and experience in this field, presumably studying the celebrated Nastaʻliq types of the Bulaq Press. See Idara, "Sarkar-i 'Asifiya ka Jadid Nastaʻliq Ta'ip," in *Daya Nara'in Nigam ke Risalah Zamana Kanpur, 1903-1942 se Intikhab: Hindustani Zaban ka Mas'ala* (Patna: Khuda Bakhsh Oriyantal Pablik La'ibreri, 1995), 285–86.

[20]. "Maulvi Sirajuddin Sahib, an accomplished calligrapher, was appointed for this task. His dedication to this endeavour is undeniable. Indeed, it was his role to sustain such relentless effort and meticulous attention for four continuous years alone." See Rafiq Beg, "Nastaʻliq Ta'ip," 101.

[21]. "Urdu Printing in India." There is a variety of data concerning the number of type sorts, the overall investment of the Nizam's Government in Nastaʻliq type-making efforts, and the individuals involved in their production.

[22]. "Urdu Printing in India."

[23]. Shirvani, *Urdu Rasm-i Khat*, 19.

[24]. Syed Ross Masood, *Ruh-i Japan* (Hyderbad-Deccan: Government Central Press, 1926), 39.

[25]. Rafiq Beg, "Nastaʻliq Ta'ip," 102.

[26]. Rafiq Beg, "Nastaʻliq Ta'ip," 102.

[27]. Rushdi, "Urdu Nastaʻliq," 26.

[28]. Idara, "Sarkar-i 'Asifiyah," 286.

[29]. Rafiq Beg served as the Principal of Aurangabad College and Secretary of the Anjuman Taraqqi-i-Urdu. Rafiq Beg, "Nastaʻliq Ta'ip," 103.

[30]. Rafiq Beg extensively detailed the process of his work and his reflections offer valuable historical insights into Nastaʻliq type-making in his 1929 Urdu article "Nastaʻliq Ta'ip."

At least three other attempts for typographic simplifications of the Nasta'liq style were made by S. H. Qureshi and Abdus Sattar Siddiqi. For an overview of these projects see Salim Ja'far, "Nasta'liq Ta'ip," *Zamana* 60, no. 3 (1933): 163–68. Another early attempt at producing a more linear version of Nasta'liq was made by Raja Sahib II of Kanda. For a specimen of this approach see Rafiq Beg, "Nasta'liq Ta'ip," 100.

[31]. Rafiq Beg, "Nasta'liq Ta'ip," 103.

[32]. Rafiq Beg, "Nasta'liq Ta'ip," 104.

[33]. Rafiq Beg, "Nasta'liq Ta'ip," 105.

[34]. Rafiq Beg, "Nasta'liq Ta'ip," 105.

[35]. Rafiq Beg, "Nasta'liq Ta'ip," 106.

[36]. Rushdi, "Urdu Nasta'liq," 25–26.

[37]. Rushdi, "Urdu Nasta'liq," 26.

[38]. Idara, "Sarkar-i 'Asifiya," 286.

[39]. Rushdi, "Urdu Nasta'liq," 26.

[40]. "Urdu Printing in India."

[41]. This specimen, titled *Specimens of Nastaliq, Naskh, and Suls Type available for sale at the Osmania Type Foundry*, was printed at the Central Press in 1933. I am grateful to Andrew Amstutz for sharing a digital copy of this specimen with me. It features in his forthcoming article, "'The Lead Letters of Nasta'liq': Debating Urdu, Movable Type, and Modernity in Late Colonial Hyderabad," to be published by *Amodern*.

[42]. Page 13 of the 1933 specimen.

[43]. This text indicates that out of a total of 594 characters, approximately 216 are frequently used, while the remainder are rarely utilized.

[44]. See page 17 of the 1933 specimen. On page 22 the weight of both the 24- and 30-point types is documented as 200 pounds each, priced at one rupee and eight annas per pound. Contrastingly, the price listed in the undated specimen is one rupee and fourteen annas per pound.

[45]. Zubair Ahmed Tamannai, "Urdu Typography: A Problem?," *Vision Magazine* 13, no. 2–12 (July 1964): 12.

[46]. Syed Abdul Karim Husaini, ed., *Persian Language in the Deccan* (Hyderabad-Deccan: The Government Central Press, 1934).

[47]. Syed Abdul Karim Husaini, *Firdausi and His Shahnama: In the Most Beautiful and Elegant Script of Nastaliq Type* (Hyderabad-Deccan: The Government Central Press, 1934).

[48]. See *Iran-i Bastan: Vizha-i Firdawsi*, No. 18–21, 1936. Also see *Ittila'at*, 8 October 1934.

[49]. In 1933, Abdul Haq's work *Dastan Rani Ketki* was published by the Anjuman Taraqqi-i-Urdu, where he served as secretary. This publication appears to have been produced as a demonstration of the Nasta'liq type, which he was in charge of reviewing at the Central Press.

[50]. A concluding remark in the 1933 type specimen states: 'You should know that no commercial motives are associated with this type-making and the valuable money spent on these efforts. This can be well verified by looking at the price list; rather, the sole purpose is that the Urdu language, which is today the largest language of the land of India, remains protected from adverse winds and thrives on the path of progress.' See page 24 of the 1933 specimen.

[51]. "Dawn," *Linotype Matrix*, no. 8 (1950): 5.

[52]. "Dawn," 5.

[53]. "Dawn," 5.

[54]. For instance, see typefaces produced by Ḥussein ʻAbdullahzada Haqiqi (1937–2003), for Tehran's leading newspapers, *Ittilaʻat* (established in 1926) and *Kayhan* (established in 1942), discussed in Borna Izadpanah, "Haghighi's Typefaces," *Nishan*, no. 46–47 (2020): 48–49.

[55]. "Sukhani ba Pishkisvatan: Tarrahi-yi Huruf-i Chap," *Chap va Intishar*, no. 2 (1994): 60.

[56]. Linotype and Machinery Limited. *An improved manner of and a type font for printing in Urdu or like script*. Indian Patent 27030 filed 5 December 1939 and accepted 4 July 1940.

[57]. Jamil A. Naqvi, "Nastaliq – the Elegant Urdu Script – Its Origin and Progress from the Sixth Century to the Present Day," *Monotype Recorder*, no. 3 (1981): 3.

[58]. Naqvi, "Nastaliq," 3–4.

[59]. Naqvi, "Nastaliq," 3–4.

[60]. ""By-Passing Gutemberg" in Karachi,'" *Monotype Recorder* 42, no. 2 (1961): 13–14.

[61]. "By-Passing Gutemberg," 14.

[62]. "By-Passing Gutemberg," 14.

[63]. "By-Passing Gutemberg," 14.

[64]. "First Filmset Urdu Newspaper Published by Javed Press," *Monotype News Letter*, no. 63 (1961).

[65]. Tamannai, "Urdu Typography," Reprinted from *Unesco Information Bulletin on Reading Materials* 5, no. 1 (April 1963) 1963, 4.

[66]. [Mirza Malkum Khan], *Hürriyet*, 12 August 1869, 8.

[67]. Tamannai, "Urdu Typography," *Vision Magazine* 13, no. 2–12 (July 1964): 9–10.

[68]. Tamannai, "Urdu Typography," *Vision Magazine* 13, no. 2–12 (July 1964): 1964, 13.

[69]. J. S. D'Souza to L. A. Collier, 16 December 1963, The Monotype Archives, JSD/ KAR/U-1/64/881.

[70]. Undated letter from L. A. Collier to E. A. Firmage, The Monotype Archives, LAC/ DLH/H-1/63/32.

[71]. LAC/DLH/H-1/63/32.

[72]. "The Fact Relating to Simplified Arabic and Urdu Nastaliq," 20 May 1964, The Monotype Archives, AMHB/JEP/1141.

[73]. JSD/KAR/U-1/64/881, 1963.

[74]. Walter Tracy to Z. A. Tammanai, 1 October 1962, The Monotype Archives.

[75]. Z. A. Tammanai to Linotype & Machinery Limited, 2 October 1962, The Monotype Archives.

[76]. Joaquim Santana D'Souza was born in Goa and opted to become a citizen of Pakistan at the time of partition. He joined the Monotype Corporation plc as clerk-in-charge of the Karachi branch on 1 October 1948 and became manager in 1957. See J. S. D'Souza, "Monotype Pakistan: A Success Story," *Monotype Magazine*, no. 3 (1986): 14.

[77]. Z. A. Tammanai to J. S. D'Souza, 16 October 1963, The Monotype Archives.

[78]. L. A. Collier to E. A. Firmage, 27 May 1963, The Monotype Archives, LAC/ BLRE/S-8/63/1297.

[79]. Extracted from the English translation of the newspaper article, 'New type of Urdu Nastaleeq,' by *Jang* London Reporter, dated 19 December 1963, annexed to a letter from J. S. D'Souza to L. A. Collier, 19 December 1963, The Monotype Archives, JSD/KAR/U1/64-940.

[80]. L. A. Collier to J. S. D'Souza, 4 December 1963, The Monotype Archives, LAC/ BLRE/S-8/64/228.

[81]. Type specimen entitled "'Linotype' Nastaliq: a type face specially created to provide publishers and printers with the benefits of modern mechanical composition for Urdu," circa 1965.

[82]. See Patent Specification for 'Mechanical and photographic type composition,' inventor: Zubair Ahmed Tamannai, Date of application and filing complete specification April 29, 1963. Complete specifications published Sep. 2, 1964. The Patent Office, London (1964), 1.

The type specimen records that 'Linotype' Nastaliq type design is protected by patents in the United Kingdom and Iran. Patents applied for in Pakistan, India and the United States of America.

In the Arabic language sources, Nasta'liq style is often referred to as *al-khatt al-farisi* or Persian script.

[83]. "'Linotype' Nastaliq for Urdu: Another typographic 'first' by L&M."

[84]. Including *jīm*, *baṛī ḥe* (*ḥāh*) and *ḳhe*.

[85]. See footnote 30.

[86]. See the examples of Siddiqi's proposal in Ja'far, "Nasta'liq Ta'ip," 164.

[87]. L. A. Collier to Mr. Vesey, 17 October 1964, The Monotype Archives, LAC/ BLRE/I-16/65/165.

[88]. Z. A. Tamannai to Walter Tracy, 20 March 1965, The Type Design Collection, University of Reading.

[89]. Walter Tracy, "The Flourishing Reed," in *Alphabet*, 1964, 141.

[90]. According to Monotype records the advancement of 500 rupees by Monotype was superseded by Linotype's offer of 13,000 rupees, plus free passage Karachi/London/Karachi and free boarding and lodging in the UK for a period of six months. Letter from J. S. D'Souza to Monotype's Overseas Manager, 7 May 1963, The Monotype Archives, JSD/KAR/U-1/63-2475.

[91]. C. N. Fellows to L. A. Collier, 17 January 1964, The Monotype Archives, DGFR/ JEP/1141.

[92]. Patented on 2 Mar 1959 by the Lebanese Patent Office, this Arabic text of this patent states that, "Mr. Kamel Mrowa the Lebanese journalist residing in Beirut, is granted a patent for 'A new method for abridging and simplifying Arabic printing letters and their arrangement' for a duration of fifteen years starting from the date of the application filed on April 15, 1959, and recorded in the Commercial and Industrial Property Protection Department under number 1127."

[93]. "The Fact Relating to Simplified Arabic and Urdu Nastaliq." 20 May 1964, The Monotype Archives, AMHB/JEP/1141.

[94]. Unsigned and undated letter, likely from E. A. Firmage to C. Fellows, attached annexed to a correspondence dated 11 October 1963 from Linotype and Machinery Limited to Monotype Corporation Ltd. This letter informs Monotype of Linotype's intention to apply for a patent for "designs for a Nastaliq type face for the composition of Urdu and other languages."

[95]. L. A. Collier to C. N. Fellow, 26 December 1963, The Monotype Archives, LAC/ BLRE/S-8/64/394.

[96]. C. N. Fellow to Walter Tracy, 18 November 1964, The Monotype Archives, CNF/ GT/3051.

[97]. Muhammad Suleman, 'An Innovative Entrepreneur', The Daily Jang, 2003, https://jang.com.pk/thenews/spedition/mkr/mir2003.htm.

[98]. Walter Tracy to Martin Boothman, 7 May 1976, The Type Design Collection, University of Reading.

[99]. Walter Tracy to Martin Boothman, 1976.

[100]. Walter Tracy to Khosrow Za'imi, 27 September 1976, The Type Design Collection, University of Reading.

[101]. Walter Tracy to Khosrow Za'imi, 7 October 1976, The Type Design Collection, University of Reading.

[102]. E. Gabrielian to Walter Tracy, 28 December 1976, The Type Design Collection, University of Reading.

[103]. Walter Tracy to E. Gabrielian, 10 January 1977, The Type Design Collection, University of Reading.

[104]. I have not been able to locate the actual artefacts that were produced for this project.

[105]. D'Souza, "Monotype Pakistan."

[106]. D'Souza, "Monotype Pakistan."

[107]. I. B. Harris to Monotype's Secretary of Typographical Committee, 12 October 1961, The Monotype Archives, IBH/DW/2020.

[108]. IBH/DW/2020, 1961.

[109]. IBH/DW/2020, 1961.

[110]. L. A. Collier to Monotype's Overseas Department, 6 November 1961, The Monotype Archives, LAC/SA/BLRE/1974.

[111]. "First Filmset Urdu Newspaper Published by Javed Press," cover and page 1.

[112]. "First Filmset Urdu Newspaper Published by Javed Press," cover and page 1.

[113]. L. A. Collier to E. A. Firmage, 8 January 1964, The Monotype Archives, LAC/ BLRE/P-12/64/497.

[114]. D'Souza, "Monotype Pakistan."

[115]. John Goulding had inherited this position from the renowned English typographer and historian, Stanley Morison (1889–1967). See "Robin Nicholas," *Eye Magazine*, 2012, https://www.eyemagazine.com/feature/article/robin-nicholas.

[116]. Letter probably from E. A. Firmage to L. A. Collier, 1 January 1964, The Monotype Archives, M/N.1.

[117]. J. S. D'Souza to L. A. Collier, 2 January 1964, The Monotype Archives, JSD/ KAR/U-1/64-1092.

[118]. C. N. Fellows to P. Henson, 10 February 1964, The Monotype Archives, CNF/ GT/2336.

[119]. Unsigned letter annexed to the letter, 30 January 1964, LAC/KAR/64-1453, The Monotype Archives.

[120]. E. A. Vesey "Urdu Nastaliq," 16 December 1964, The Monotype Archives, Typ. 2778.

[121]. LAC/BLRE/I-16/65/165, 1964.

[122]. L. A. Collier "Urdu Nastaliq," 24 November 1964, The Monotype Archives, EAV/ YH/212.

[123]. EAV/YH/2512, 1964.

[124]. L. A. Collier to E. A. Vesey, 8 December 1964, The Monotype Archives, LAC/ BLRE/S-8/65/550.

[125]. LAC/BLRE/S-8/65/550, 1964.

[126]. LAC/BLRE/S-8/65/550, 1964.

[127]. Typ. 2778, 1964.

[128]. L. A. Collier to E. A. Vesey, 26 August 1965, The Monotype Archives, LAC/ BLRE/S-19/65/4382.

[129]. D'Souza, "Monotype Pakistan."

[130]. J. S. D'Souza to E. A. Vesey, 12 January 1970, The Monotype Archives, JSD/AL10/881.

[131]. This report is attached to JSD/AL10/881, 1970.

[132]. Report attached to JSD/AL10/881, 1970.

[133]. LAC/BLRE/S-8/65/550, 1964.

[134]. Some of these characteristics are described in more details in Borna Izadpanah, "Gulzar: A Contemporary Urdu Nasta'liq Typeface," *Gulzar Font*, 2022, https://gulzarfont.org/.; and "Gulzar: Expanding the Variety of Urdu Nasta'liq Options," *Google Fonts Blog*, 2023, https://fonts.googleblog.com/2023/03/gulzar-expanding-variety-of-urdu.html.

[135]. Naqvi, "Nastaliq," 4.

[136]. Naqvi, "Nastaliq," 4.

[137]. Naqvi, "Nastaliq," 4.

[138]. Andrew Boag and Lawrence W. Wallis, eds., "Urdu Nastaliq, 1981," *The Monotype Recorder: One Hundred Years of Type Making: 1897–1997*, no. 10 (1997): 31.

[139]. Type specimen "Noori Nastaliq: computerised Urdu calligraphy."

[140]. Naqvi, "Nastaliq."

[141]. According to Kamal Mansour, a Monotype employee, the decline of Monotype typesetters meant that setting text in Noori Nasta'liq became unfeasible as personal computers in the late 1980s and 1990s only supported simplified Arabic text styles in a very basic manner. In the early 2000s, Mansour explored the advanced typographic capabilities of OpenType to create a functional version of Noori Nasta'liq for use in standard word processing applications like MS Word. After extensive testing, he opted to develop a typeface utilizing the original two- and three-character 'ligatures,' while longer words were formed using individual letter forms governed by intricate rules. This approach retained the shorter ligature forms, reflecting the calligrapher's intended hand. To broaden the array of renderable words, the design omitted dot patterns from all ligature patterns and supplemental letter forms. Instead, each glyph, whether a ligature or individual letter, was assigned 'anchor-point' coordinates to potentially receive combining marks during the OpenType rendering phase.

By 2005, a functional OpenType-based Noori Nasta'liq typeface was completed and licensed to a select few corporate clients with compatible computing environments. However, when the licensor later disapproved of any Noori Nasta'liq version not fully based on the original ligatures, Monotype ceased distribution of the OpenType version. Despite this setback, the project laid the groundwork for developing other calligraphic typefaces, proving essential in pioneering techniques for complex script typesetting.

Personal correspondence with the author in an email dated 6 September 2015.

[142]. L. A. Collis to Ghiasuddin Khan, 16 January 1963, The Monotype Archives, LAC/ BLRE/S-8/63/572.

[143]. Walter Tracy to Arthur Henry Walker, 27 February 1970, "Iran: Typography," WT correspondence, folder 18c Persian and Pushtu, The Type Design Collection, University of Reading.

[144]. "Iran: Typography," 1970.

[145]. Naqvi, "Nastaliq," 4.

[146]. For instance, see "Why are there so Few Digital Nasta'liq Urdu Fonts?," *Google Fonts Blog*, 2023, https://fonts.googleblog.com/2023/03/why-are-there-so-few-digital-nastaliq.html; Alizeh Kohari, "How to Bring a Language to the Future," *Rest of World*, 2021, https://restofworld.org/2021/bringing-urdu-into-the-digital-age/.

[147]. *The World Factbook*, accessed 23 March 2024, https://www.cia.gov/the-world-factbook/countries/world/#people-and-society.