Research Articles

Reassembling the Written, Rewriting the Mind: The Emergence of "Thoughtography" (*Nensha*) in Meiji Psychology

Hansun Hsiung, Durham University

Abstract: In late 1910, Tokyo Imperial University psychologist Fukurai Tomokichi announced his discovery that thoughts could be inscribed directly onto photosensitized surfaces—a power he dubbed *nensha* 念写, subsequently rendered into English as "thoughtography." The ensuing debates over such powers structured a landmark demarcation struggle over the boundaries of science and pseudoscience in modern Japan. This article takes a new and yet unexplored approach to such demarcation struggles by first asking: what were *nensha* as visual and material artifacts? In response, I argue that Fukurai's experiments belonged to a wider history of inscription. In Meiji Japan, brush, pen, woodblock, movable type, telegraphy, phonography, and photography destabilized inherited assumptions about writing, authorship, intention, and mind. Experimental psychologists such as Motora Yūjirō and Fukurai reassembled these media into apparatuses for studying reading, writing, attention, will, and communication. Reframed in this context, I propose that *nensha* represented Meiji psychology's response to a crisis in written communication: an attempt to recover the presence of mind amid proliferating mechanical inscriptions. On this basis, I then reframe late-Meiji demarcation as a contest among rival hermeneutics of visible traces. To decide whether thoughtography was science was to decide what inscriptions could count as evidence, who or what could write, and how the human mind might be made legible.

Yin-Cheng Journal of Contemporary Buddhism Issue 2.1 (2026): 65–107 https://doi.org/10.66775/qq1vbx82

Keywords: history of psychology, history of science, psychical research, pseudoscience, media history, inscription and writing technologies, Fukurai Tomokichi, Meiji Japan

> It is impossible to say just what I mean!
>
> But as if a magic lantern threw the nerves in patterns on a screen.
>
> ~ T.S. Eliot, "The Love Song of J. Alfred Prufrock" (1915)*

In the blustery mid-December of 1910, Tokyo Imperial University psychologist Fukurai Tomokichi (1869–1952) stumbled on a phenomenon the existence of which—so he claimed—should shake the very core of all science. In European psychological literature, certain extraordinary states of consciousness induced by hypnosis had long been alleged to awaken supernormal mental powers.[1] Building on this research, Fukurai alleged to have discovered through his own experiments a heretofore undocumented power whereby one might inscribe the ideas in one's mind directly onto photosensitized surfaces without the aid of a camera. To this discovery, he gave a name: *nensha* 念写, popularly translated into English as "thoughtography."[2]

Nensha provoked violent tremors across the Japanese scientific establishment. Already the object of academic controversy due to his experiments in clairvoyance, Fukurai after December 1910 was catapulted into the center of a protracted public

This article has many debts, most notably to Menglan Chen and Joy Wu, organizers of the Medium of the Mind conference at Harvard University in 2024, as well as to Hase Masato and his seminar students at Waseda University, who provided a space for me to repeatedly workshop chapters from 2023–24. Archival work supporting this article would not have been possible without the generosity of the Japan Foundation and the DNP Foundation for Cultural Promotion.

* Eliot, "The Love Song of J. Alfred Prufrock," 14. I would like to thank Fraser Riddell for bringing my attention to this line.

1 For example, Bergson, "De la simulation inconsciente dans l'état d'hypnotisme"; Fukurai, *Saimin shinrigaku gaiyō*, 108–27. On the reception of these phenomena in Japan, see Ichiyanagi, *Saiminjutsu no Nihon kindai*, 64–121.

2 Fukurai, *Tōshi to nensha*, 91–97.

dispute that sprawled across the pages of popular journals and newspapers, and embroiled biologists, philosophers, physicists, physiologists, and psychiatrists. Recriminations of deceit and incompetence were hurled against both sides with unprecedented acrimony. Such was the tumult that by October 1913, Fukurai was forced to take an indefinite leave of absence from his professorial duties, and by 1915, was permanently dismissed from Tokyo Imperial University.

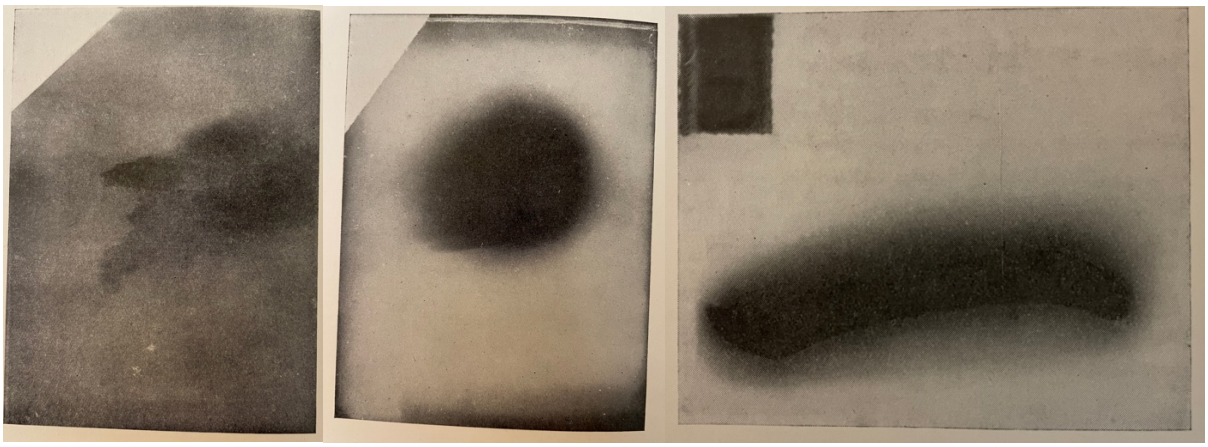
Across repeated analyses and commentaries, these events have been enshrined as a major moment in the history of modern Japanese science. They have been depicted in particular as modern Japan's first major dispute over the demarcation between "true science" and its others.[3] Demarcation was without doubt a crucial outcome of the debate over *nensha*, and at the end of the article, I shall return to a discussion of what the whole Fukurai affair might reveal about epistemic boundaries. But so that my discussion does not merely recapitulate decades of scholarship on the matter, I seek first and foremost in this article to construct a new understanding of what *nensha* itself actually was. For despite all the attention paid to the *nensha* scandal's scientific consequences, studies have curiously elided any genuine focus on what *nensha* as visual artifacts—as so many plates and prints—have to tell us about understandings of "mind" in the late Meiji era.[4]

---

[3] This vast literature on Fukurai controversies includes: Hsiung, "The Gentleman, the Detective, and the Housewife: Sensory Worlds of Experiment in Japanese Thoughtography, 1910–1911"; Takasuna, "The Fukurai Affair: Parapsychology and the History of Psychology in Japan"; Ichiyanagi, *"Kokkuri-san" to "senrigan": Nihon kindai to shinreijutsu*; Ichiyanagi, "Senrigan jiken wa Kagaku no bunseki taishō tariuru ka: Shinrigaku no kyōkaisen o meguru ronsō"; Nakao, *Kagakusha to mahōzukai no deshi: Kagaku to hikagaku no kyōkai*, 45–78; Nagayama, *Senrigan jiken: kagaku to okaruto no Meiji Nihon*; Terazawa, *Tōshi mo nensha mo jijitsu de aru: Fukurai Tomokichi to senrigan jiken*. For an overview of scholarship on this demarcation, see Gordin, *On the Fringe: Where Science Meets Pseudoscience*.

[4] The two exceptions to this trend are the brief treatment of Fukurai in Hamano, *Shashin no bōdārando: X-sen, shinrei Shashin, nensha*, 222–30; and Kagoshima, "Nensha Shashin no mediashi teki kōsatsu." The lacuna on the side of scholars of Japan becomes all too clear given that art historians and visual studies scholars were working on "thoughtography" in postwar America and "photographies de la pensée" in fin-de-siècle France. See Mikita Brottman et al., eds., *Ted Serios: The Mind's Eye*; Grünfelder, *Ted Serios: Serien*; del Pilar Blanco, "The Haunting of the Everyday in the Thoughtographs of Ted Serios"; Fischer, "'La Lune au front': Remarks on the History of the

Indeed, it may not even be evident to most casual observers why these plates and prints should arouse interest. This is apparent when *nensha* are placed alongside contemporaneous examples of supernormal photography. Consider, for instance, Figures 1 and 2 below. In Figure 1, we have specimen of *nensha* produced in Fukurai's experiments with the medium Nagao Ikuko (1871–1911) from December 1910 through January 1911. Compare these, now to Figure 2. At left we have an image produced by William Hope (1863–1933), a leading spirit photographer of the early twentieth century; at right, a "photographie de la pensée" produced by Louis Darget (1847–1923) in the late 1890s during experiments with physician Hippolyte Baraduc (1850–1909). Hope's image greets us with a phantasmic excess and textural sensuousness: the sitter is engulfed by a diaphanous shimmer in which appears, faintly translucent—a ghostly visage. In Darget's image, the fluidic swirls across the print's tonal palette mimic the contours of "vital rays" said to be emanating from the brain, producing an impressionistic, oneiric blur that resembles the shape of a bottle.



Photography of Thought"; Chéroux, "Photographs of Fluids"; Christian, "Cameraless Photography and Its Imponderable Media"; and Hamano, *Shashin no bōdārando*, 202–22, 230–41.



Figure 1: nensha produced by Nagao Ikuko in experiments with Fukurai in Dec.-Jan. 1910-11, from Fukurai Tomokichi, Tōshi to nensha. Courtesy of the National Diet Library of Japan.

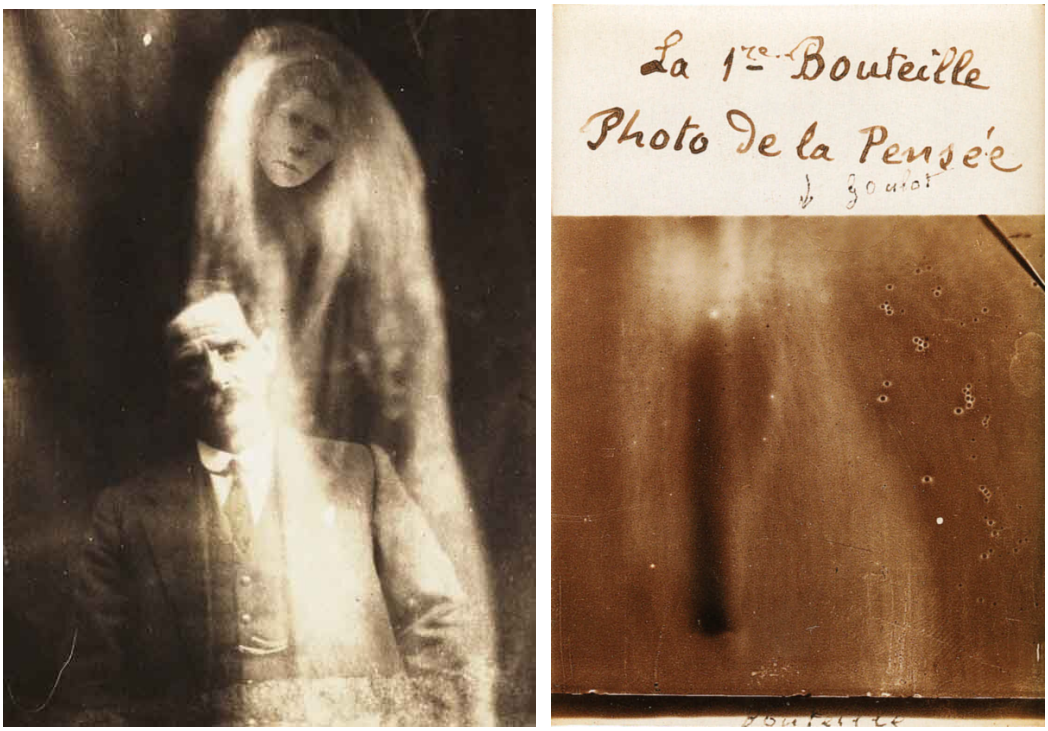


Figure 2: (left) "Man with 'spirit' of his second wife," a 1923 spirit photograph by William Hope, copyright of Board of Trustees of the National Science Museum (UK), CC by-NC-SA 4.0; (right) photographie de la pensée produced by Louis Darget, copyright of IGPP, Freiburg.

In contrast, *nensha*—at least during this formative stage of 1910–11—appear impoverished. Amidst vague blotches and stains that seem more the handiwork of inexpert developing than supernormal agency, we see plain *kaisho* 楷書 script as if written by brush: clear, austere, and unremarkable. This basic aesthetic contrast poses some immediate problems for dominant understandings of the relation between science and photography within fin-de-siècle and early twentieth-century visual culture. In rough terms, one might say that during this moment, photography and science were bound together in a kind of radioactive phantasmagoria. The discovery of x-rays, uranium, polonium, and radium prompted a discourse concerning photography's indexical ability to capture emanations invisible to the human eye, thereby situating the medium at the juncture of the physical and metaphysical, the material and spiritual. The very same capacity of photography to serve as an "automatic" and "objective" record of light simultaneously rendered it a record of "noise"—a deposit of inadvertent and unintended traces whose phantom presence teased the possibility of unknown forces. As a result, photographs sat uneasily between the world of scientific evidence, on the one hand, and on the other hand an arena of supernatural spectacle and paranormal desire, promising through their very mechanical objectivity a documentation of the occult. This radioactive phantasmagoria guided the visual imagination surrounding spirit photography, just as it did Darget and Baraduc's aforementioned photography of vital rays.[5]

Early *nensha*, however, appear to work against such a claim. Neither spectacular nor noisy, *nensha* arouse no desire to see the invisible. They are instead all too visible in their plainness and simplicity. Bitter and loud though discourse about *nensha* may have been, *nensha* artifacts themselves pose to us a puzzle of in their utter banality. How could images so uninteresting—"disappointing," as one contemporary scholar describes them—elicit such an uproar?[6]

The problem, I argue, may well lie in the nature of the comparison itself. Closer scrutiny of sources gives reason to doubt that *nensha* should be understood

---

5 See the discussion in Maekawa, "Shashinron toshite no shinrei shashinron: shinrei shashon no tadashii tsukasekata," 36–37; Hamano, *Shashin no bōdārando*.

6 Kagoshima, "Nensha Shashin," 5, 48, 66, 68.

primarily in connection with other photographic practices, and thus to doubt that the fin-de-siècle radioactive phantasmagoria is an adequate contextual framework for *nensha*'s interpretation. To begin with, Fukurai explicitly rejected theories of radiation, using this to position the discipline of psychology against physics and physiology: rather than material forms of radiation, *nensha* allegedly attested to sui generis mental forces existing beyond the physical world.[7] Furthermore, Fukurai seems to have been unconcerned, if not dismissive, of the importance of photography's particular medium-specific affordances. Whereas European observers translated Fukurai's work as "photographies de la pensée" and "Gedankenphotographie," thereby locating *nensha*'s import in relation to the photographic medium, Fukurai in his own English publications insisted on rendering *nensha* as *nen-graphy*, and on occasion as *thought-graphy*.[8] The term "thoughtography," with its additional "o" vowel, was introduced only as a concession in the face of criticism by Anglophone observers that *nen-graphy* and *thought-graphy* lacked euphony, and not in deliberate sonic allusion to photography.[9] Insofar as spirit photography and other forms of supernormal photography arose in Fukurai's oeuvre, they were discussed as merely *one manifestation* of the more encompassing power of *nensha*, which—as we shall see—was not confined to photosensitized plates and film alone.[10] Taken together, these clues suggest that Fukurai understood *nensha* less in relation to photography specifically, and more in relation to a far broader field of *graphein*, i.e., inscription in general. This would mean that comparison to practices of writing, drawing, carving, and printing, as well as newer technologies of telegraph and phonograph, are essential to constructing an adequate understanding of *nensha*.

My article therefore begins from the standpoint that we must seek to understand *nensha* on its own terms as a technology of inscription—specifically, a technology of inscription designed to resolve anxieties facing the discipline of psychology in

---

7 Fukurai, *Tōshi to nensha*, 351.

8 Duchatel, "Quelques Nouvelles experiences de photographie de la pensée"; Freudenberg, "Gedankenphotographie in Japan.". In contrast, see Fukurai, "Study on Nengraphy"; Fukurai, "The Experiment of the Thought-graphy with Japanese Mediums."

9 "Supernormal Photography," 541.

10 Fukurai, *Shinrei to shinpi sekai*, 87–153; Koike, *Shinrei Shashin*, 65–68.

the late Meiji period. Doing so, I argue, reveals that *nensha* was fundamentally as part of a moment in the *reassembly of writing-mind relationship* in modern Japan. In speaking here of "reassembly," I am loosely borrowing from Bruno Latour's use of the term. For Latour, "reassembly" was a keyword for critiquing the way in which the social sciences assumed the *a priori* existence of an entity called "society."[11] In contrast, it was the existence of "the social" itself that had to be questioned. Far from readily serving as a pre-existing framework, "the social" was rather "a movement during a process of assembling," or "a very peculiar movement of re-association and reassembling."[12] Social scientists should thus track at any given moment the *reassembly* of varied "collectives" that, at each time and place, coalesce from "a trail of associations between heterogeneous elements" into a temporary formation called "society."[13]

Latour's deeper claims about "the social" are not the object of this article. Narrower in its ambitions, the phrase "reassembly of the writing-mind relationship" refers here to the manner in which rapidly changing practices and technologies of inscription constructed and reconstructed models of how written traces could be interpreted to understand the mind that produced them, and even what a "mind" itself was. As Seth Jacobowitz and Hoyt Long have shown, the Meiji era was a period marked by a proliferation of new practices and technologies of inscription in ways that destabilized existing meanings of "writing" and provoked societal unease.[14] At the same time, concepts of mind, personhood, and interpersonal communication fluctuated continuously as Western notions of the individual competed with attempts by Buddhist thinkers, among others, to modernize their metaphysics of the self.[15] The emerging discipline of psychology, I argue, became a principal nexus through which changes on both these fronts were negotiated. Mixing principles of telegraphy, phonography, and photography, Meiji

---

11 Latour, *Reassembling the Social: An Introduction to Actor-Network Theory*, 3.

12 Latour, *Reassembling the Social*, 1, 7.

13 Latour, *Reassembling the Social*, 5.

14 Jacobowitz, *Writing Technology in Meiji Japan: A Media History of Modern Japanese Literature and Visual Culture*; Long, "(Il)legibility and Handwriting in Meiji Letters: A Media History."

15 On Buddhist modernization and the life sciences, see Godart, *Darwin, Dharma, and the Divine: Evolutionary Theory and Religion in Modern Japan*.

psychologists constructed their own inscriptive apparatuses to perform experiments that would yield durable data on the mental processes at work in writing and reading. This data was in turn fused with ideas of will and agency, sourced equally from the study of William James as well as the study of zazen, to generate theories of what the mind was and how it communicated in writing. It was within this context that Fukurai's *nensha* research emerged. *Nensha*, too, was an experimental instrument of inscription, and specifically one that pointed to the mind's ability to face up to ways in which the destabilization of the written had threatened the integrity of communication and the transmission of intention.

In what follows, I begin by outlining the contours of the destabilization of writing at a general level, then connect this destabilization to the various instruments and theories devised by experimental psychologists such as Motora Yūjirō (1858–1912) to study processes of reading and writing. I then turn to Motora's disciple, Fukurai Tomokichi. First, I demonstrate how Fukurai's interest in supernormal powers like *senrigan* 千里眼 and *nensha* built upon Motora's work on the nature of reading, writing, attention, and will. Next, I proceed to show that Fukurai used *senrigan* and *nensha* as experimental methods to address a perceived crisis in written communication. I conclude with speculations on how the demarcation of science and pseudoscience in the late Meiji period can be understood as a contestation between rival hermeneutic frameworks that each sought to recover some part—but only fragments—of older models of the writing-mind relationship, most notably those rooted in calligraphy.

The Proliferation of Inscription



Figure 3: Shōsai Ikkei, Kaika injun kōhai Kagaku (1872). Courtesy of the Printing Museum, Tokyo.

Composed in 1872 by the artist Shōsai Ikkei, alleged disciple of Hiroshige, the woodblock print titled *Kaika injun kōhatsu kagami* 開化因循興發鏡 [Mirror of the Eruption of Enlightenment and Traditionalism] depicts a battlefield of modernity

(Figure 3). As a steam locomotive in the upper left corner spews black clouds of smoke, objects anthropomorphized unfold their struggle. We see, for instance, "Western cuisine" pushing the back of "Western liquor," as the latter grapples with "Japanese sake." To their right, a chair is kicking a Japanese folding stool to the ground; at the bottom, bricks force clay tiles to their knees. To the left of the bricks, a lamp prepares to bludgeon a candle.

And then there is the center right of the middle panel. A bound Western codex stands, pen in hand, dueling with a brush grasped by a book in East Asian binding. A title slip on the cover of Japanese-clothed figure at right indicates that it is a complete edition the *Four Books* of Zhu Xi; below, we see the word *kangaku* 漢学, or "Chinese Learning." The Western book, meanwhile is an abecedary, and on the sleeve of its personification is the term *yoko-moji* 横文字, or "horizontal letters," referring to Western script. One might thus hastily interpret the scene as one of philosophical and ideological struggle. But another interpretation might run as follows: at stake is a struggle between brush and pen, between kanji and alphabets, between codex and *fukurotoji* 袋綴じ binding—between practices and techniques of inscription.

In part, this destabilization of the field of inscription could be seen as a particular consequence of new media. Such a claim emerges most famously in the work of Friedrich Kittler. Per Kittler, the multiplicity of new "graphic" technologies and techniques during the second half of the nineteenth century—telegraphy, phonography, photography—severed the phonocentric link that yoked inscriptions to authorial voices.[16] Put differently, new media decoupled written traces from their putative guarantors of meaning.

Suggestive though it may be, Kittler's account arguably overemphasizes the rupture of new media, and has the tendency to elevate a certain reading of European modernity into a universal condition. Caution is thus required: we must understand new media not as a sharp break from, but rather a protracted renegotiation with, broader existing media ecologies; and we must be attentive to the geographic unevenness of experience. Here, Lisa Gitelman's study of telephones, phonographs, and telegraphs is perhaps more productive. Gitelman

[16] Kittler, *Discourse Networks 1800/1900*; Kittler, *Grammophone, Film, Typewriter*.

stresses that these technologies, each with their own "model of what reading and writing can be," should be analyzed relative to the historical legacy of local media ecologies of inscription, particularly the pre-existing "cultural meanings" of print and manuscript.[17] Although Gitelman's analysis is based on the American experience, her general point suggests the following: in considering the destabilization of the field of writing in Meiji Japan, we need to consider how a script with non-alphabetic components rooted in inscription technologies of brush-based handwriting and woodblock printing struggled to redefine its standing in an emerging global communication order of post and telegraphy biased toward alphabetic scripts, and populated by new machines for producing mechanical inscriptions without human control or intervention.

To a certain degree, this inquiry has already been prefigured in discussions of print modernity. For example, it has been argued that the displacement of woodblock printing by moveable type entailed a loss of the calligraphic traces preserved by the former, a condition which Komori Yōichi, citing in particular the standardization of Minchō type, has linked to the "death of the author" as a corporeal trace.[18] We shall return to this question of the death of the author in the final section of this article, using *nensha* to rethink notions about the fate of authorial agency. For now, it is sufficient to note that the mass scale of industrial printing generated a protracted series of efforts to standardize and streamline the appearance of text in a manner that impinged not only on the materiality of typefaces, but the nature of language itself. The latter is most obvious in early twentieth-century *kokugo* 国語 reforms that, as ample secondary literature has shown, imposed centralized norms of usage and graphic form for kana and kanji—reforms in which, as we shall see, experimental psychologists vigorously participated.[19]

But the woodblock-to-moveable-type transition was not the only issue at stake. The physical tools by which writing was inscribed on the page were changing. The rise of pens, pencils, and other hard-tipped writing implements created challenges

---

17 Gitelman, *Scripts, Grooves, and Writing Machines: Representing Technology in the Edison Era*, 4.

18 Komori, *Kōzō toshite no katari*, 8–9.

19 Lee, *The Ideology of Kokugo*; Yasuda, *"Kokugo" no kindaishi*.

for existing understandings of proper handwriting founded on the affordances of the "soft" brush.[20] Simultaneously, new scripts also came into being: the need for efficient record-keeping led to the development of multiple shorthand methods of transcription themselves dubbed "verbal photography."[21] Shorthand's metaphoric use of photography to describe writing took literal shape in technologies of long-distance communication. Telegraphy had long posed the problem of phonocentric inscription for cultures that employed non-alphabetic writing systems, including but not limited to Chinese characters.[22] Lacking of a phonetic syllabary, late imperial China in fact took the lead in investing in devices for the "electric transmission of characters" (*dianqi chuanzi* 電氣傳字)—the Chinese name given in the 1890s to what, in the West, went under the name of "phototelegraphy" and "picture telegraphy."[23] Tokyo Imperial University engineers began similar research programs at the start of the twentieth century.[24] Indeed, technologies such as phototelegraphy should serve as a reminder that "photography" was not solely a matter of images, but was constantly implicated in the remediation and transmission of writing.

In this sense, it would be more accurate to avoid a vocabulary of new media rupture, and instead describe the Meiji period as a moment of destabilization, negotiation, and experimentation in writing. Of importance here is not a break with the past; rather, it is a question of how the proliferation of inscriptive practices and technologies, linked and relinked to one another in constantly shifting assemblages and chains of remediation, temporarily prevented the formation of any single center of gravity that might achieve hegemony over what writing was or meant. Destabilization and lack of center inevitably produced anxiety. And one central arena where these anxieties crystallized was in debates over the nature of reading and writing that began circa the late 1880s and early 1890s and blossomed in the first decade of the twentieth century.

---

20 Long, "(Il)legibility."

21 Jacobowitz, *Writing Technology*.

22 Kuzuoğlu, "Telegraphy, Typography, and the Alphabet: The Origins of the Alphabet Revolutions in the Russo-Ottoman Space."

23 Liu and Li, "Beilan laihua yu chuanzhen jishu zai Zhongguo de zhaoqi lishi."

24 Kamoi, "Densō Shashin."

The factors catalyzing this anxiety were many, but two forces in particular deserve mention. First, there was intensified pressure from the school system with the emergence of competitive examinations that determined life chances. Fin-de-siècle Japan saw the publication of a spate of study guides for students that attempted to discipline reading, offering advice on how to read voluminously with speed and efficiency in an age of information overload. These included, at times, warnings concerning the physical dangers of reading, such as the ophthalmologist Ōnishi Yoshiakira's warning that a deluge of cheap printed matter which crammed characters in small type onto the page was leading to an epidemic of near-sightedness among students.[25] Second was the burgeoning amount of handwritten paperwork, spurred by the expansion of modern bureaucracies and large-scale transnational corporations with correspondence networks spanning the capitalist world system.[26] It is hard to estimate the volume of internal memos, communiqués, and forms circulated, but we can get a sense from Hoyt Long's statistics on the postal system, which by 1908 was handling ca. 1.5 billion letters per year, compared to only 27 million telegrams and 235 million telephone calls.[27]

Inscription and Will

Early experimental psychology became one of the foremost academic disciplines to invest in studying changes to reading and writing. To a certain extent, this was part and parcel of a more intrinsic relationship between models of cognition and inscription. Even before the advent of modern experimental psychology as such, philosophy had repeatedly taken its metaphors of mind and memory from

25 Ōnishi, *Gakusei kinshi no hito yobōsaku*.

26 On the general phenomenon, see Robertson, "Documents, Empire, and Capitalism in the Nineteenth Century"; Robertson, *The Filing Cabinet: A Vertical History of Information*; Felten and von Oertzen, eds., "Histories of Bureaucratic Knowledge"; Kafka, *The Demon of Writing: Powers and Failures of Paperwork*.

27 Long, "(Il)legibility," 261.

technologies of inscription, from Plato's wax tablets to Locke's tabula rasa.[28] Similarly, when experimental psychology emerged in mid-Meiji Japan, it did not shy from making analogies to photographic plates, magic lanterns, and *sumi-e* 墨絵 (ink wash) paintings. As Ōkubo Ryō has shown, founding figures like Motora Yūjirō routinely equated "ideas" (*kannen* 観念) with "projected images" (*eizō* 映像).[29] In concrete historical terms, however, Meiji experimental psychology's involvement with questions of reading and writing was a byproduct of the fact that the discipline, institutionally and financially, received its primary support from the Monbushō 文部省, or Ministry of Education, which saw psychology as the key field guiding pedagogical practice. Among the many collaborations between psychologists and educational policymakers was the Kokugo Chōsa Iinkai 国語調査委員会, or National Language Research Council, launched in 1902 with Motora and Matsumoto Matatarō—Motora's student and Fukurai's peer—appointed to research reading and writing in order to inform policies of script reform.[30]

Motora and Matsumoto's research for the Kokugo Chōsa Iinkai controversially recommended that considerations of efficiency—of speed and accuracy—favored horizontal writing and reading, the use of katakana over hiragana, and the use of *kaisho* characters written by pen rather cursive *sōsho* 草書 characters by brush.[31] Although the majority of their recommendations were not adopted, the last of these was. In 1904, the Monbushō issued its first nationally standardized textbooks on handwriting, and within this made *kaisho* the central script to be learned in schools, in the process renaming the handwriting curriculum from *shūji* 習字—a term traditionally associated with calligraphy—to *kakikata* 書き方, i.e., "method of writing" or "writing" tout court.[32]

The importance of *kaisho* will resurface later in this article. For now, however, it is more important to call attention to the instruments Motora devised for his

---

[28] Eddy, *Media & the Mind: Art, Science & Notebooks as Paper Machines, 1700–1830*; Mitchell, *Iconology: Image, Text, Ideology*, 7–46.

[29] Ōkubo, *Eizō no arukeorojī: Shikaku riron, kōgaku media, eizō bunka*, 210–215.

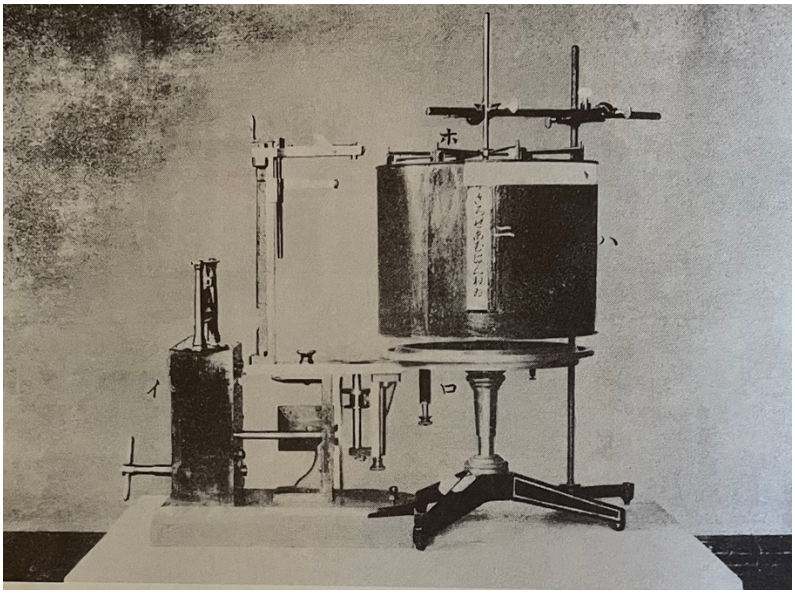
[30] Tsuchiya, *Kokugo mondai ronsō shi*, 90–114.

[31] Motora, "Yoko-yomi tate-yomi no rigai ni tsuite"; Kokugo , *Katakana hiragana yomigaki no nan'i ni kan suru jikken hōkoku*.

[32] Long, "(Il)legibility," 273–274.

reading and writing experiments. These experimental apparatuses reveal the ways in which the very construction of reading and writing as epistemic objects was achieved only through hybrid media assemblages that combined elements from cameras, line facsimile devices, and even phonographs.

The first major instrument, used by Motora and Matsumoto in their experiments on reading, was what Motora called a "short-exposure device" (*shunkan roshutsuki* 瞬間露出器), later renamed the "vertical-horizontal reading device" (*jūō dokuji sōchi* 縦横読字装置).[33] Central to both was the kymograph, a rotating drum and inscription device popularized since the 1850s through the physiological research of, Helmholtz, DuBois-Reymond, and others to yield continuous traces of electric signals. Motora's short-exposure device, however, did not employ the kymograph as a means of inscription. Instead, the kymograph was used as a surface of display.



[33] Descriptions of experimental apparatuses in the paragraphs that follow are sourced from Tōkyō Teikoku Daigaku Bunkadaigaku Shinrigaku Kyōshitsu, ed., *Jikken shinri shashin chō*.

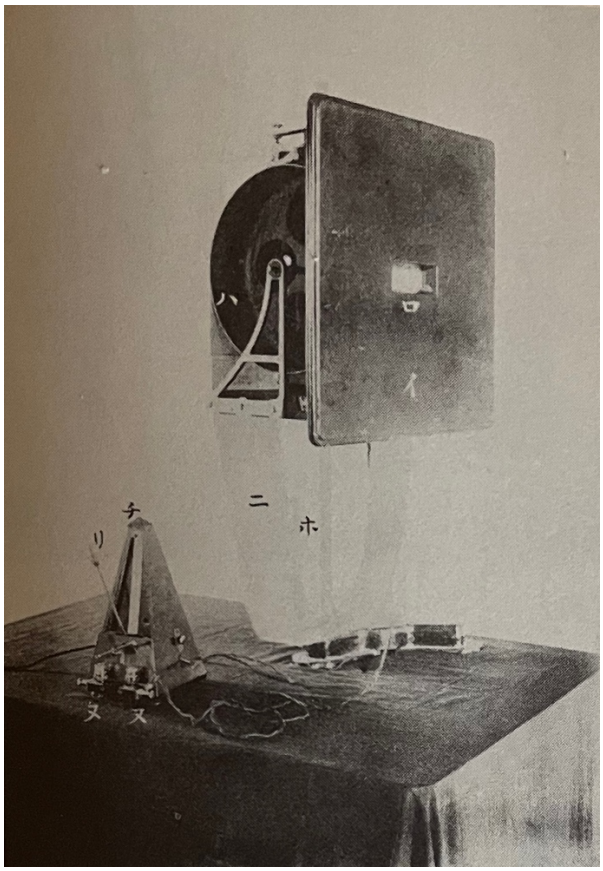
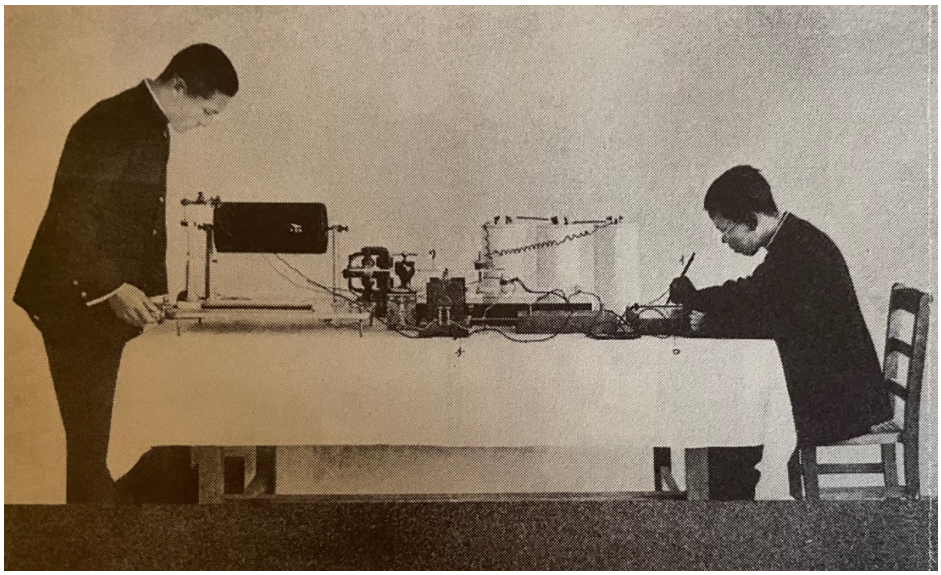
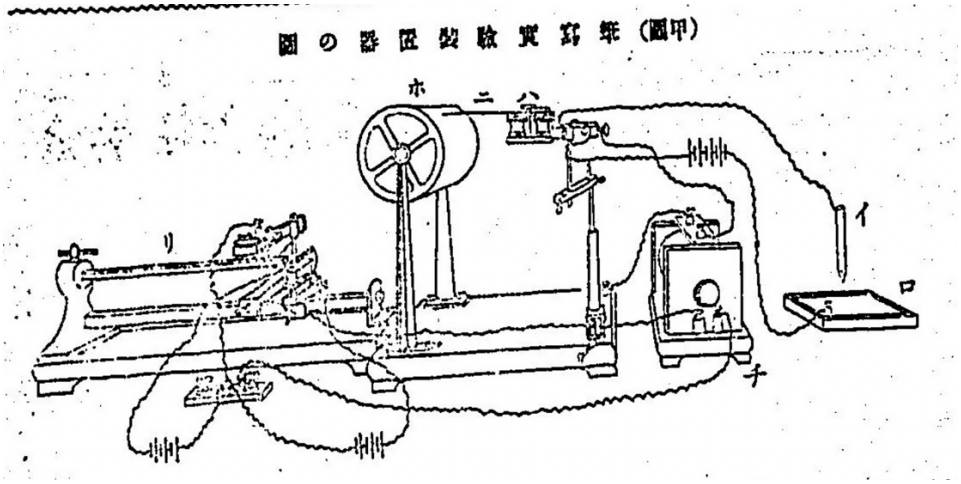


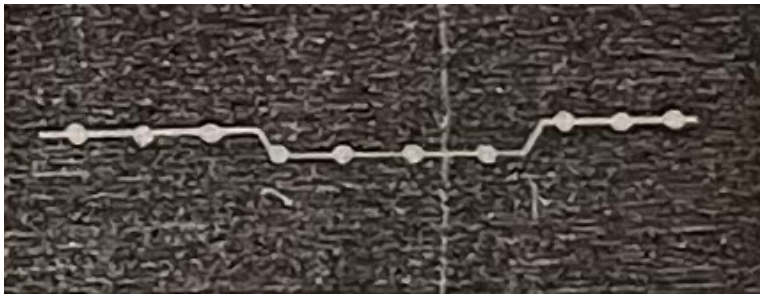
Figure 4: One of Motora's short-exposure devices. From Shinrigaku Kyōshitsu, ed., Jikken shinri shashin chō.

As seen in Figure 4 above, written script was placed in a line on the kymograph, either vertically or horizontally. The kymograph was then situated behind a 2.4cm x 24cm window with a shutter click mechanism. The rotation of the kymograph allowed for different sequences of script to be displayed. Meanwhile, the shutter mechanism allowed for controlled adjustment of the amount of time of exposure down 0.5 seconds. That term—exposure (*roshutsu* 露出)—is telling. The apparatus effectively sought to understand reading through the means of a camera mechanism. The eye of the experimental subject—and behind that eye, a mind—was effectively positioned in relation to the apparatus as a kind of dry plate. As the term 'exposure' suggests, strings of kana and kanji were "exposed" to this "dry plate" for different lengths of time, in order to determine their "imprint" upon the eye. Indeed, commercial shutters had only emerged at the end of the 1880s, first in Germany and Britain, allowing for speeds of up to 1/1000th of a second. Motora's

"short-exposure device" in effect modeled itself on the leading photographic apparatuses of his era.







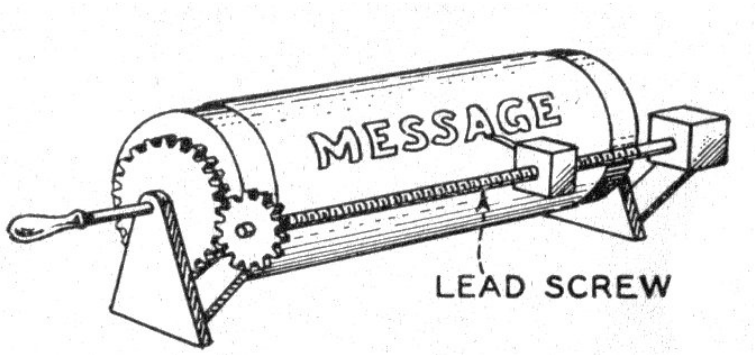


Figure 5: The top two images depict Fukurai's apparatus for writing experiments. The third image depicts a kymograph printout from an experiment. From Shinrigaku Kyōshitsu, ed., Jikken shinri shashin chō, courtesy of the National Diet Library of Japan. The bottom image depicts Frederick Bakewell's 1848 line facsimile device. From Korn, Bildtelegraphie.

In contrast to the use of the kymograph for exposure, the apparatus Motora designed for writing experiments shows a closer relation to early facsimile technology, and to an extent the phonograph. As pictured at the bottom of Figure 5, prior to the introduction of the photocell, early attempts at facsimile technology used the physical contact of a metal stylus on electro-sensitized paper wrapped around a rotating cylindrical drum (effectively, a kymograph) in order to read (scan) and write (receive) line images over existing telegraph wire networks. Motora's device for measuring writing speed offered a variation on this setup. The experimental subject was given a metal stylus and then asked to write assigned characters and strings onto a metal board, designated by the kana "i" (イ) and "ro" (ロ) in the top two images of Figure 5. The board and the stylus were connected to separate wires that fed into another stylus （marked "ni" ニ） that would inscribe on the kymograph. Contact between the original stylus and board completed the circuit, leading to inscription on the kymograph, as seen in the third image of Figure 5. Later on, Motora added a weighted mechanism to this, allowing the kymograph also to record the pressure of the stylus. Through this system, writing was *rewritten* as duration and intensity on the kymograph paper. This act of inscribing pressure intensity teases a link between Motora's apparatus and the phonograph. As Helmut Müller-Sievers has argued, the original Edison phonograph was also essentially an adaptation of existing kymograph devices, with

the difference that frequency was inscribed *into* rather than merely *onto* a wax or foil cylinders to produce three-dimensional depressions that allowed for the capture of information concerning frequency.[34]

In short, Motora and Matsumoto's experiments reassembled varied inscription devices—camera, facsimile, phonograph—in order to transform reading and writing into epistemic objects of psychological research. Importantly, these hybrid inscriptional assemblages, by yielding data on reading and writing, laid the basis for Motora to theorize concerning larger concepts of mind, attention, and will.

Attention had stood at the center of Motora Yūjirō's research since his doctoral days, working with his advisor, G. Stanley Hall (1846–1924), founder of the first psychological laboratory in the United States, on subperceptual thresholds of haptic attention.[35] After his return to Japan in 1888, he began work on a device for training visual attention (*chūi renshūki* 注意練習機). In fact, as scholars of Motora have shown, this attention-training device was the prototype for what became the short-exposure device analyzed above.[36] Over his lifetime, Motora invented multiple attention-training devices using kymographs of different sizes, allowing longer strings to be displayed and tested on multiple experimental subjects simultaneously. Furthermore, Motora also incorporated lantern slides and projectors into apparatuses in place of the kymograph (Figure 6). One of nine different projector lamps would at any time illuminate a random glass side, on which the subject was to focus his attention.

[34] Müller-Sievers, *The Cylinder: The Kinematics of the Nineteenth Century*, 85–88.

[35] Hall and Motora, "Dermal sensitiveness to gradual pressure changes."

[36] Osaka, *Jikken shinrigaku no tanjō to tenkai: jikkenki to shiryō kara tadoru Nihon shinrigaku shi*, 86–87.

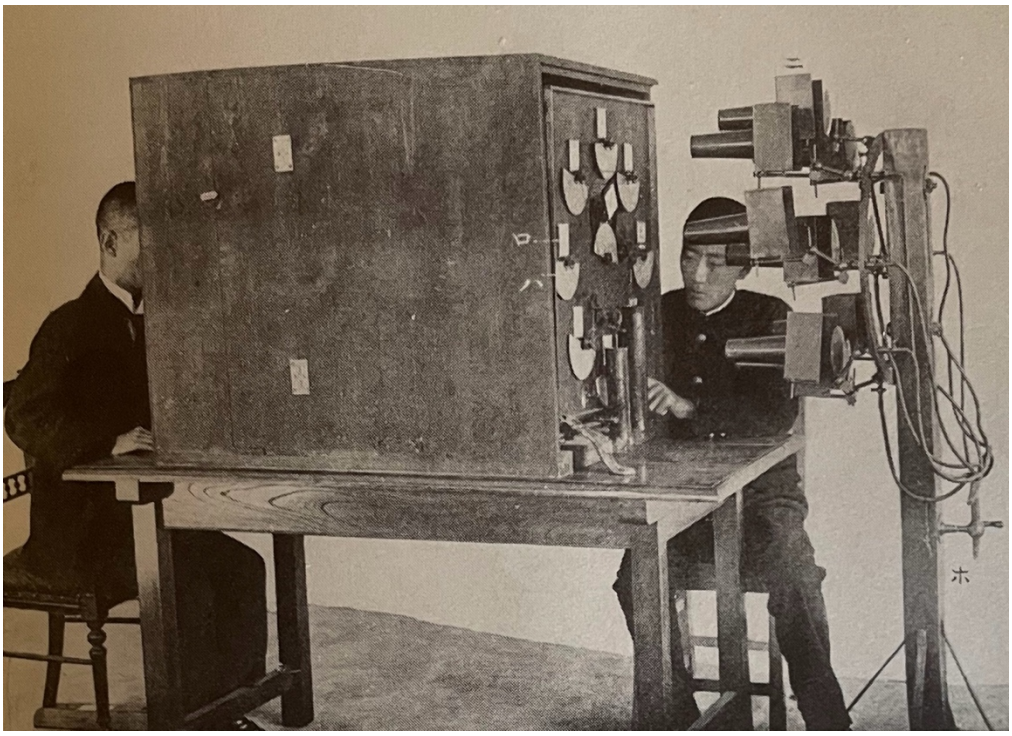


Figure 6 : One of Motora's devices for training attention using slide projection. From Shinrigaku Kyōshitsu, ed., Jikken shinri shashin chō. Courtesy of the National Diet Library of Japan.

These attention training devices were used in the context of educational studies to understand attention in schoolchildren beginning in 1890, sponsored by the Nihon Kyōiku Kyōkai 日本教育協会 (Japan Education Association), of which Motora was a leading member. The key concern of the Kyōkai was the role of attention disorders as developmental impediments—a concern that would later lead them to petition the Monbushō to create schools for children with learning disabilities.[37] Practical at first, Motora's educational studies of attention opened the path toward a deeper philosophical shift in his approach to psychology. This shift emerged from the observation that children with alleged learning disabilities could reliably register new stimuli with equal, if not often greater, acuity and speed as their peers. Motora branded the phenomenon "spontaneous attention," and contrasted it with what he termed "intentional attention." Whereas spontaneous attention fell into the realm of passive psycho-physiological responses—the mind's receptiveness and

[37] Osaka, *Jikken shinrigaku*, 41–2.

reaction time to bodily senses—intentional attention pointed to the realm of the mind's sui generis activity and, more pointedly, its ability to dominate and direct the body. Elaborating, Motora framed the issue as one of the mind's ability to control the "movement" of the corporealized senses, i.e., the ability to hold the senses still on a fixed point, then methodically direct them to a subsequent point without divergence or wavering.[38] Intentional attention suggested the operation of a force akin to the *pure will* itself. In this manner, Motora increasingly began to situate attention research within discourses of moral education (*shūshin kyōiku* 修身教育). At stake in true intentional attention was the training of willpower, and thus the cultivation for the self as an agentive moral subject.

To an extent, this turn toward the human subject's moral formation was influenced by the work of William James, whom Motora considered the second most important founder, next to Wundt, of the discipline of modern psychology.[39] For James, "effort of attention" was "the essential phenomenon of will," in turn making "volitional attention" the "only moral act [...] we ever perform."[40] But interestingly, the net effect of Motora's turn to studies of attention and will was a turn away from the psychological theories in the West. Starting in 1894, Motora began to involve himself intensively in Zen meditation, taking zazen lessons at Engakuji 円覚寺 in Kamakura.[41] These experiences prompted a methodological and theoretical reorientation that culminated, at the International Congress of Psychology in Rome in August of 1905, in a wholesale attempt to re-found the discipline of psychology on the basis of Buddhism in general and Zen in particular.[42]

This was not the first intersection between Zen and modern psychology. As early as the late 1880s, the physiologist Ōsawa Kenji (1852–1927) had hypothesized

---

38 Motora, "Jidō no chūi no jikken," 243; Motora, "Ein Experiment zur Einübung von Aufmerksamkeit."

39 Osaka, *Jikken shinrigaku*, 49.

40 James, *Psychology*, 452, 455

41 Motora, "Sanzen Nisshi."

42 Motora's speech was simultaneously published in English and French: Motora, *An Essay on Eastern Philosophy*; Motora, "Essai sur la philosophie orientale. L'Idée du moi dans la philosophie orientale."

similarities between hypnotic states and the states achieved during zazen practice. The philosopher Inoue Enryō, otherwise known for his campaigns against "superstition" in the name of rational "science," went so far as to assert that zazen was not merely similar to, but in fact a superior form of hypnosis.[43] Motora's work, however, took a step further, situating zazen at the very heart of both psychological methodology and moral cultivation. Wundtian experimental psychology had famously placed protocols of "introspection" (*Selbstbeobachtung*) at the fledgling discipline's core. Not to be outdone, Motora argued that zazen was itself a kind of primordial "experimental procedure" antedating and anticipating Wundtian introspection: as "a remarkable and very informative method for studying the mind," zazen offered access to a "direct experience" of the "pure self." From the methodological, moral implications followed. Whereas the phenomenal self existed in a fragmented state—torn between unconscious transitory desires and conflicting conscious motives—the "pure self" perfected the will and channeled it toward a "persistent theme and comprehensive concept." It was this, according to Motora, that "formed the essence of personhood."[44] Zazen was, put simply, a privileged technique for understanding the mind and realizing its potential for authentic action in the world.

Communication Breakdown

As Motora's disciple, as one of Japan's foremost psychological authorities on hypnotism, and as the first Japanese translator of William James, Fukurai Tomokichi directly inherited this moral matrix of reading, writing, attention, and the will. Indeed, it was Fukurai alone who most forcefully argued—against the prevailing opinion of the age—that Motora had matured late in life into an idealist and mind-centered monist, despite beginning as a youthful materialist who

[43] Wu, "Techniques for Nothingness: Debate over the Comparability of Hypnosis and Zen in Early-Twentieth-Century Japan"; Ichiyanagi, *Saiminjutsu no Nihon kindai*.

[44] Motora, "Essai," 43, 46, 70–71; Motora, "Zen to shinrigaku no kankei"; Satō, "Motora Yūjirō no sanzen taiken to sono yoha: tōyō teki jiga o shinrigaku teki ni kangaeru michi."

"interpreted mental activity in terms of physical dynamics."[45] Already while still a doctoral student under Motora's tutelage, Fukurai had begun echoing his teacher. Invited to lecture before an audience of Sōtō monks in training, he emphasized that the Buddhist doctrine of "non-self" (*muga* 無我) and the elimination of false desires in fact aligned with modern psychological discourses of "self-realization" and the achievement of full "personhood," a condition defined as the alignment between "true self" and moral action based on certainty of conviction. This notion of personhood had deep political stakes. Referencing the recent outbreak of the Russo-Japanese War, Fukurai concluded his lecture with a warning that only through cultivating techniques for the realization of the true self could Japan expect to produce "heroes" (*gōketsu* 豪傑) who might aid it in victory.[46]

As his work continued, however, Fukurai found himself adding a new element to his discussion of personhood: the problem of *communication*. As with Motora, James' thought in part also played a role here, albeit in a contrastive manner. Despite his lifelong interest in telepathy, James in the last instance remained doubtful about the possibility of true communication, suggesting instead that "personal consciousness" acted as a kind of cage from which genuine escape was impossible. The mind, James wrote "keeps its own thoughts to itself."[47] Fukurai, however, took the opposite view: the mind was inherently driven to communicate itself in sensible forms to the outside world. "All thoughts latent in the mind," Fukurai declared, "necessarily seek to express themselves in some form so long as they are given the opportunity."[48] At the simplest level, this expression might take place as involuntary physiological reflex—for instance, a change in one's complexion (*kaoiro* 顔色). At higher levels, this drive gave rise to culture itself, taking the form of poetry, painting, sculpture, music, architecture, and philosophy. In an article in the pages of *Shinri kenkyū* 心理研究 [Psychological Research], a journal founded by Motora, Fukurai gave to this fundamental drive a name: "the

45 Fukurai, "Motora-sensei no shinri kenkyū ni okeru ippanteki ikō to sono kekka."

46 Fukurai, "Shinrigaku," 241–326, 320–6.

47 James, *Psychology*, 153

48 Fukurai, "Iwan to suru kokoro," 115.

mind that seeks to speak" (*iwan to suru kokoro* 言はんとする心). Self-realization and personhood were accordingly linked to the mind's ability to communicate.

Here, Fukurai's reasoning took a historical turn. Meiji modernity was one of overstimulation. These conditions of modern life, Fukurai argued, threatened the mind that seeks to speak by amplifying competing thoughts. As he wrote,

> There are countless ideas, emotions, and desires [...] that suppress one another. As a result, any one thought's drive to express itself is held back greatly by other thoughts. Thus, the fact that a thought goes unexpressed is not because the mind lacks a drive to seek to speak. It is because each thought is blocked by another, despite the existence of such a drive. If this blockage were to be eliminated, then all thoughts would be able to express themselves freely.[49]

How, then, was one to eliminate this blockage, allowing the mind to communicate itself, in turn allowing for genuine self-realization? Motora's work on zazen and Fukurai's own study of hypnosis hinted at solutions. In both zazen and hypnotic states, subjects reached an intense state of concentration marked by "mental unity" (*seishin tōitsu* 精神統一). In Fukurai's words, "there must appear only one thing in consciousness at that moment, or if many things are there, they must be unified to become one object. Such an action of mind, by which only one thing is made to appear in consciousness, or many things are unified to become one object in consciousness, is called mental unity (精神統一)."[50] Fukurai's stress on mental unity again echoed William James, while also recalling his earlier remarks on heroism: in James' account, the "heroic mind" of "exceptional individuals" required "the absence of any conflicting notion in the mind."[51]

So ran the theory behind Fukurai's psychology. But just as Motora's research took place against the backdrop of anxieties over reading and writing relative to script reform in schools, so too did Fukurai's work play out on a scene set by practical concerns over reading and writing—this time, in relation to disruptions

---

49 Fukurai, "Iwan," 116.

50 Fukurai, "The Experiment," 18.

51 James, *Psychology*, 424, 435, 459.

in long-distance communication through the expansion of postal and telegraph systems. At precisely the moment when Fukurai began entertaining the possibility of supernormal powers—a possibility he first broached in publication in 1905's *Saimin shinrigaku gairon* 催眠心理学概論 [General Theory of Hypnosis Psychology]—disgruntlement was emerging with existing paradigms of epistolary correspondence. "The essential nature of letters" (*tegami honrai no seishitsu* 手紙本来の性質) as the journal *Tegami zasshi* 手紙雑誌 [Epistolary Magazine] put it in 1905, comprised "script that transmits intention across a thousand *ri*" (*senri men suru ga gotoku i o tassuru no moji* 千里如面達意の文字).[52] Yet letter-writing in its current form, as the *Tegami zasshi* went on to argue, was failing at this task. One line of debate concerned the failure of letter-writing in the face of the superiority offered by telegrams. Specifically, unlike traditional postal letters, telegrams better conditioned the mind into a state of expressive "clarity":

> If the mind is not clear [*kuria* クリア], then one cannot write concisely. Thus, the more one is accustomed to writing telegrams, the more one's mind naturally becomes clear. And the more one's mind becomes clear, the more one can produce all their writing clearly, including the writing of [postal] letters.[53]

This clarity was attributed to the economic basis of telegrams. The high cost of telegraphic transmission imposed linguistic economy in a way that forced the sender to distill his message in a manner that communicated his intentions in their purest and simplest form, unlike the more ornate and indirect rhetorical protocols of traditional letters. This being the case, "if one writes [postal] letters with the same mental attitude [*kokorogumi* 心組] as if writing a telegram, then they will succeed in communicating their original intent."[54]

Alongside the clarity of intent in telegraphic messages, a second line of debate concerned the visual clarity of handwritten script itself. These debates echoed Motora's recommendation that writing was best done in *kaisho* by pen rather than

---

52 Okada, "Tegami to denshinbun," 6.

53 Okada, "Tegami," 6.

54 Yano, "Denshinbun to jitsuyōjō no tegami," 5.

cursive *sōsho* script with a brush. Namely, in an age of mass correspondence that required constant reading of handwritten documents, the *Tegami zasshi* advised that the future lay in writing all letters with pen:

> Arm outstretched, elbow away from the torso, brush drooping down—the method of writing up to now is impractical. Techniques of writing must be reformed in order to adapt to real needs. One should thus deeply celebrate the recently rising trend of writing with a pen. [...] The pen is originally something Western; our script is originally something Chinese. Writing Chinese script with a pen is in fact an extraordinary transformation on par with the transformation wrought by the arrival of Chinese script [to Japan]. This is an age of great innovation for writing.[55]

To encourage this new revolution in writing, the *Tegami zasshi* engaged in a new editorial policy of collecting and printing photoreproductions of sample writing in pen, using this to diffuse new standards of script. This move to pen was not without its detractors, stirring controversy over the fundamental meaning of calligraphy and its relation to communication. Motora had already faced backlash—from scholars of Japanese literature at Tokyo Imperial University in particular—when he argued for the elimination of brush cursive writing. These scholars accused Motora of promoting an aesthetic of "printed characters" (*insatsu moji* 印刷文字) which were at odds with Japanese prosody, wherein discrete syllabic units should be written as connected by calligraphic ligatures.[56] More broadly, calligraphers argued that complaints about messy cursive handwriting failed to understand the communicative model within calligraphy. Against reformist champions of *kaisho*, calligraphers maintained that the physical features of handwriting itself were part of the "message" to be communicated. Drawing on Song literati theories of painting and calligraphy popularized during the Edo period, calligraphers argued that the traces of one's brush (*hisseki* 筆跡) were reflective of one's "personality" (*seikaku hitogara* 性格・人柄) and "moral character" (*hinsei* 品性).[57] The locus classicus for

[55] Shimojō, "Jitai oyobi moji no kairyō," 7.

[56] Osaka, *Jikken shinrigaku*, 41.

[57] Long, "(Il)legibility," 263, 265.

this claim was, in particular, is Guo Ruoxu's 郭若虚 (active 1070–80) *Tu hua jian wen zhi* 図画見聞記 [An Account of Experiences in Painting], wherein to explain brushstrokes in painting, Guo returned to the art of calligraphy, calling the writing of characters "mind/heart impressions" (*xin yin* 心印).[58] Per Guo,

> It is always the case that a painting must entirely convey the artist's character (*qiyun* 氣韻). … It [painting] may be compared to the commonly practiced art of judging personal signatures. We call these [signatures] 'mind/heart-impressions' (心印). They originate from the source of the mind and are perfected in the imagination to take shape as traces, which, being in accord with the mind are called 'impressions.' … Signatures, furthermore, contain all of one's nobility or baseness, misery or prosperity. Now, painting is the equivalent of calligraphy, and as Master Yang Xiong said, 'Words are mind-sounds. Calligraphy is mind-painting (*shu xin hua ye* 書心畫也).[59]

Calligraphy, then, was a kind of physiognomy made visible through inscriptions on paper, communicating through its form the deeper mind or intent of the writer. And this calligraphic hermeneutics was alive and well in the modern psychological discipline, particularly in fields of abnormal psychology and personality psychology. Graphological analysis, most famously, had begun to emerge as an applied technique for understanding personality by the dawn of the twentieth century. More pertinent for our understanding of *nensha*, however, is the fact that Fukurai himself, while still Motora's doctoral student, had begun actively applying hypnosis as a technique for improving brushmanship among children and adolescents. From 1903 to 1904, and in collaboration with Yoshikawa Shōdō, abbot of Raigo Temple, Fukurai conducted a series of hypnosis sessions on twenty-seven students from the city of Matsuyama aged six to sixteen. The results as reported by Fukurai later in 1905 spoke for themselves: all students advanced at least one rank

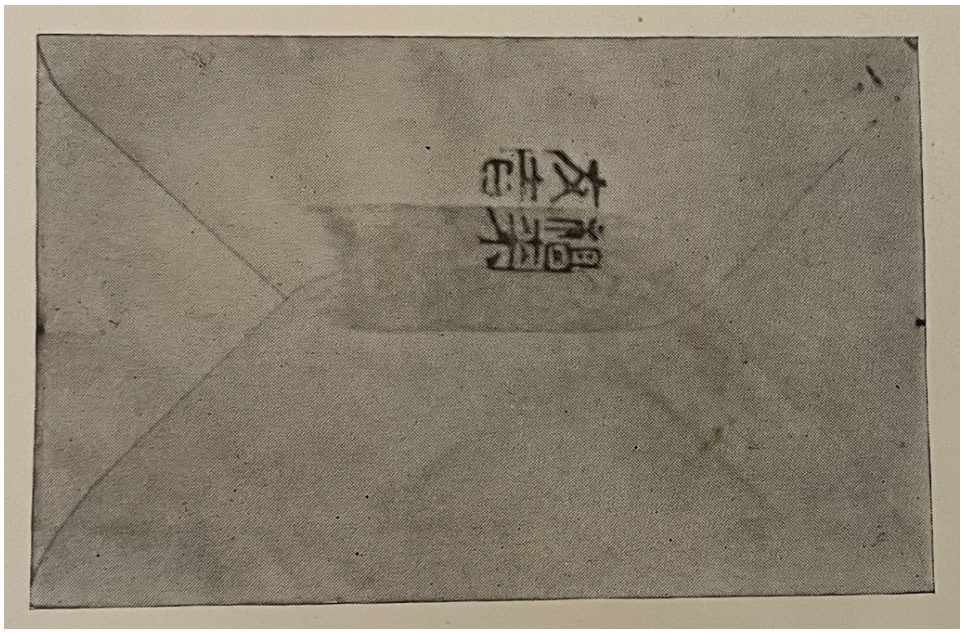
[58] For a more general explication of the context of Guo's reception in early modern Japan, see Haruna, "Edo jidai no shoron."

[59] Guo, *Tu hua jian wen zhi*, 1.44.

in their handwriting grades, with twelve moving from the lowest (third) rank to highest (first) rank.[60]

In short, by 1905, a new discourse had begun to coalesce around the problem of handwritten communication at a distance, and psychology—specifically through hypnosis—had emerged as a discipline proffering potential solutions. Unsurprisingly, then, we can discern in the early stages of Fukurai's *senrigan* and *nensha* studies a search for an experimental method of "mental unity" that would resolve dilemmas of long-distance written communication, much as Motora had sought in zazen an experimental method for cultivating moral personhood. Fukurai's full-scale experiments with supernormal powers began in the summer of 1909 with investigations into the *senrigan* abilities of Mifune Chizuko. At its broadest, *senrigan* encompassed all forms of seeing across space and time. In practice, however, Fukurai's *senrigan* experiments were distinctly modeled after epistolary correspondence (see Figure 7 below). For nearly five months prior to ever meeting Mifune in person, Fukurai conducted experiments through the postal system itself. The process worked as follows. Fukurai would seal a message in an envelope and send this to Mifune. Mifune would then enter a state of "mental unity" (精神統一) directed at the message, and compose a report of what she, through her powers, saw, returning this report to Fukurai along with the unopened envelope. In certain cases, Fukurai even used actual mail—such as New Year's greeting letters—collected from colleagues. This epistolary model remained in place after the transition to face-to-face experiments, with messages written by audience members placed within sealed envelopes for Mifune.

[60] Fukurai, *Saimin shinrigaku*, 327–331.



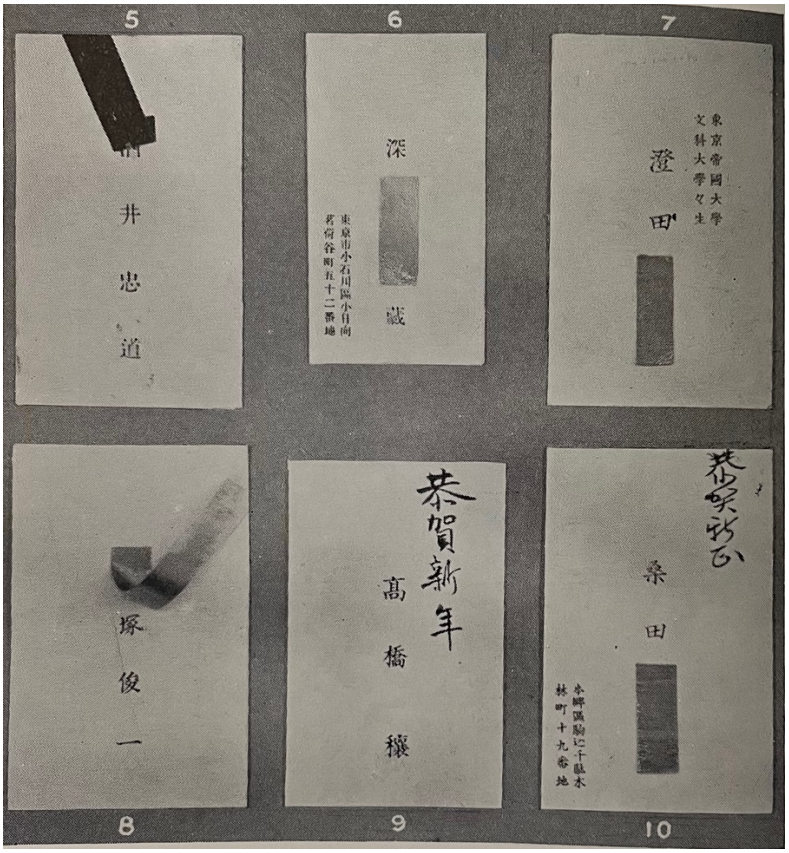


Figure 7 :Examples of letters used in Fukurai's experiments with Mifune Chizuko. From Fukurai, Tōshi to nensha. Courtesy of the National Diet Library of Japan.

In this sense, *senrigan* was a method of receiving and reading letters—one that guaranteed the integrity of long-distance communication which had been of late called into question. Script that left the hand of the sender might be hidden, lost, or otherwise concealed, but through mental unity, one might safeguard the delivery of the message. To invoke the aforementioned words of the *Tegami zasshi*, if "the essential nature of letters" is "script that transmits intention across a thousand *ri*," then *senrigan*—quite literally an act of seeing across a thousand *ri*—was evidence that despite any physical barriers, one could make one's head "clear" through concentration and thereby successfully read and receive the "intention" of all messages, no matter how hidden or invisible they might. At the stage of Fukurai's experiments with Mifune from 1909–10, this act of reading and receiving was limited still to the model of handwritten letters. In later years, however, as reports of *senrigan* blossomed across Japan, the power came to include other acts of reading applicable to forms of inscription produced by new media technologies which seemed at first "hidden" or "invisible" to the receiver. For instance, as detailed in an *Asahi* report from early 1911, a case had allegedly emerged in Kōbe of a boy capable of "reading"—that is, reproducing—the sounds and melodies on an unlabeled phonograph recording simply by concentrating on it through his *senrigan* powers.[61] In this way, *senrigan* asserted in the final instance the return of human control over the teeming multiplicity of inscriptions in modernity that threatened to be illegible or inaccessible to readers.

Nensha in turn completed the communications circuit. Insofar as *senrigan* was about the ability to "read" or "receive" handwritten messages across physical barriers, *nensha* was about the ability to "write" or "send" messages in a way that addressed both the concern that handwriting was too often illegible, and the concern that the elimination of the cursive brush prevented the "mind" from fully expressing itself. Let us return now to Figure 1, with which I began this article. The thoughtographs produced in Fukurai's experiments with Nagao Ikuko from late November 1910 through January 1911 form an implicit narrative sequence related to the disciplining of handwriting. The evolution over time of *nensha* documents progress from hazy forms, shapes, and blotches, into a state of written language,

[61] "Kōbe no shōnen senrigan," *Asahi Shinbun*.

moving from simple-stroke characters to more complex compounds. This was deliberate. Fukurai was explicit in his instructions to Nagao that *nensha* should be written in large, legible *kaisho* characters, and aim to be "clear."[62] Echoing perhaps his earlier research on hypnosis and brushmanship, Fukurai analogized his experimental procedure to one of a handwriting instructor. In his words, "When one first acquires a certain bad habit of holding a brush when learning to write, it is difficult to eliminate this [bad habit]. If one changes the way one holds one's brush suddenly, then the characters would come out even more poorly. In some cases, the bad habit is never corrected in a lifetime."[63]

Nensha was thus an attempt to render compatible calligraphic theories of mind (*kokoro* 心) and brush trace (筆跡) in an age of calligraphic demise. Or, put differently, Fukurai's early experiments with Nagao were lessons in writing at a moment when writing *kaisho* in a manner that resembled the look of moveable type threatened to displace the personal expressivity of calligraphy. In the face of this threat, *nensha* made the claim that the anonymous world of modern inscriptions, disciplined toward efficiency and clarity rather than personality, did not necessarily entail the death of the author. Instead, the mind could be trained to achieve unity and directly express its concentrated will in clear characters, thereby reinvesting inscription with the continued presence of authorial self and intention.

Inscriptive Agency and Meiji Demarcation

In contrast, Fukurai's critics had little interest in whether or not any self or mind was being expressed. This was above all true in the scathing attack delivered by physicists, published in the spring of 1910 as *Senrigan jikkenroku* 千里眼実験録 [A Record of Senrigan Experiments], and bearing the imprimatur of Tokyo Imperial University heavyweights such as Yamakawa Kenjirō (1854–1931) and Tamuru Takurō (1872–1932). Prefacing the volume is a series of photographs wherein Nagao's *nensha* have been subjected to examination under a microscope. Analysis

62 Nagayama, *Senrigan jiken*, 89.

63 Fukurai, *Tōshi to nensha*, 12.

of these microscope images then occupies a core section of the book, constituting important evidence of deceitful tactics on the part of Fukurai and Nagao. According to the physicists, *nensha* of characters such as the *kawa* 川 (river) kanji featured "fuzzy edges" (*keba* ケバ), suggesting that each separate stroke had in fact been cut out from cloth or felt, then placed onto the dry plate and exposed (Figure 8). Whatever may or may not have been in Nagao's mind—whatever will or intention she may have been seeking to realize—the *nensha* images were clearly fake. Fukurai's research failed to be science.

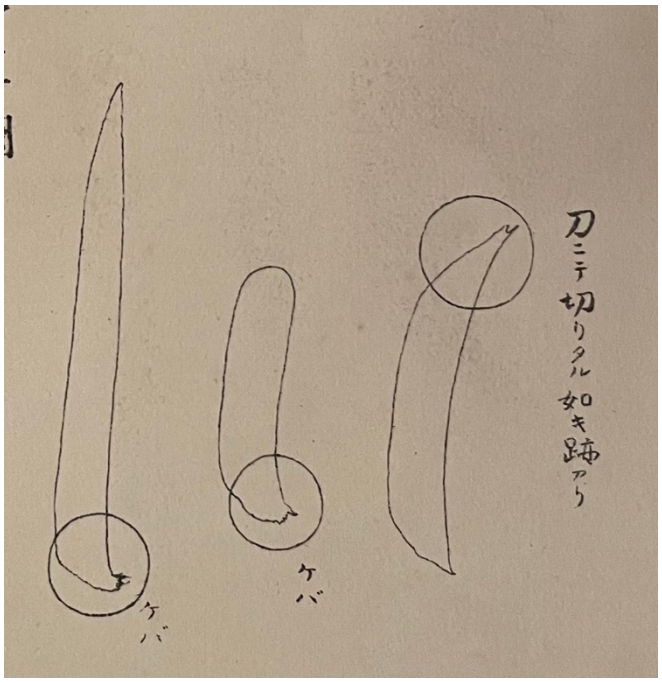


Figure 8: Fuji's microscopic analysis of the nensha of kawa indicating fuzzy edges that suggest cutting from cloth. Frpm Fuji and Fujiwara, Senrigan jikkenroku. Author's copy.

At the most basic level, the angle taken by such criticisms conforms to the rather trivial and well-worn trope of demarcation: physicists advocated a "materialist" science against Fukurai's "spiritualist" or "metaphysical" pseudoscience. Yet placed within the broader context of the reassembly of the writing-mind relationship, this seeming "materialism" reveals itself as more complex. As we have begun to see, new technologies and practices of inscription in the Meiji period were particularly disruptive of a hermeneutic model of calligraphy. Rather than simply

"materialist," the fixation of Fukurai's detractors must be understood as a renegotiation of this hermeneutic model. Specifically, we must understand the manner in which the positions articulated by both Fukurai, as well as his critics, were representative of the gradual breakdown and erosion of calligraphy's link between visible trace and mental intention.

Calligraphic theories of inscription fundamentally understood the unique material features of each specific brush trace to be expressive of 'mind' and its intention through the equally material intermediary of the body. The interpretation of written inscriptions was thus linked in a chain, from trace, to brush, to hand, to mind. More abstractly, we could describe this as a chain linking *visible trace* to *mechanisms of production* to *mental intention*. Together, this chain formed the unity of expression. Although born out of literati theory, these ideas evolved into a general hermeneutic framework over the course of the Edo period. Notably, early modern works of *tenarai* 手習 (calligraphy) and *hitsudō* 筆道 (brushmanship) typically combined instruction on proper hand positioning and brush technique with explications of chirology (see Figure 9). Traces made by the brush were correlated with features—shape and surface patterns—of each individual's hand, and these linked more broadly to the writer's personality, and even fate.

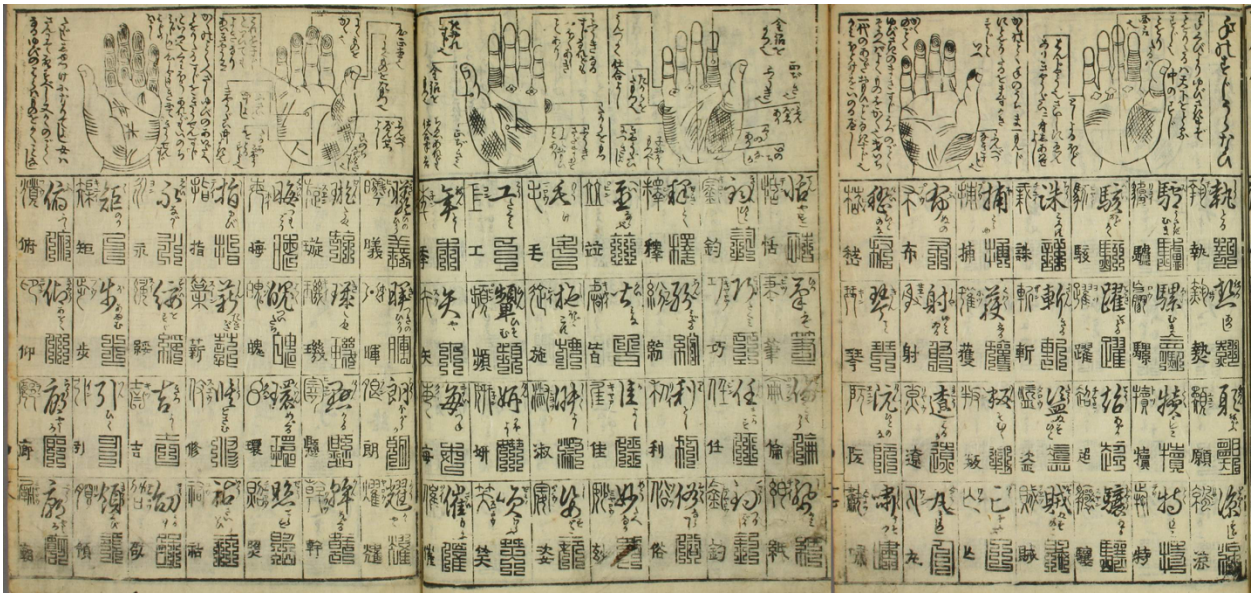


Figure 9: Chirological correlations within handwriting/calligraphy manuals. For instance, the upper left depicts the relations between swirls on one's middle finger and

elevated handwriting skill. From Sasayama, Hitsudō keiko hayagakumon. Courtesy of Waseda University Library.

The trace-brush-hand-mind chain was simultaneously both physical and psychical, neither material*ist* nor spiritual*ist*. The relationship between the visible trace and the intermediary mechanisms of its production—the brush and hand—was attentive to material, while conjoining the material with a hermeneutics of spirit. Compare this now with the standoff over early *nensha* circa 1910–11. Whereas Fukurai stressed the link between visible trace and mental intention, physicists stressed the link between visible trace and mechanisms of production. Both are fragments, or splinters, of an earlier hermeneutic model of expressiveness.

How can we understand this fragmentation or splintering? The proliferation of new technologies and practices of inscription and the destabilization of writing's meanings that began in the second half of the nineteenth century did not so much mark the death of the author as such, so much as a *redistribution and pluralization of forms of inscriptional agency*. Teeming modes by which traces might be produced, reproduced, and circulated meant that it was no longer possible to easily ascribe only one mode of agency or authorship to an inscription. On the one hand, this called attention to multiple mechanisms of inscriptive reproduction in their medium specificity: pen or brush; lithograph or photograph; woodblock or moveable type; telegraph or facsimile, etc.? All these, too, were now potential authors or agents of inscription. On the other hand, the dizzying options available provoked a concomitant anxiety over the possibility of a meaningful order to inscriptions, and thus desire to reinstate, or even hallucinate, the presence of some sort of "mind."

The problem of science's demarcation raised by late-Meiji controversies over *nensha* thus hid behind it a broader problem of inscription. The nascent discipline of psychology, as a fundamentally hermeneutic enterprise that interpreted written traces as data revealing the workings of the human mind, faced particular struggles in tackling this problem. Psychology's hybrid admixture of new media assemblages, Jamesian theories of attention, and Buddhist theories of self represented a struggle to construct a viable model whereby some residue of an interior, psychic world

might still be rescued from amongst so many diffuse and distributed technologies of writing.

Yet while its situation was acute, psychology was certainly not alone in facing the challenge. The reassembly of the mind-writing relationship affected a wholesale reorganization of varied discourses and practices by confronting them with the question of what or who could write, and thus what writing said about the writer. Differing answers to these questions spawned different hermeneutics that reconfigured and splinted possibilities already made available in prior calligraphic and mantic approaches inscription. In this sense, debates over *nensha* force those who would seek to understand demarcation—what constitutes science and where its boundaries lie—to search for answers in the history of writing itself. For in the end, the true question at stake for Meiji thinkers was as follows: *what are visible traces really evidence of*? To answer this was to articulate a framework by which the world reveals to us the secrets of nature, including the nature of the human mind. It was, in short, to articulate a framework of science itself.

Bibliography

Bergson, Henri. "De la simulation inconsciente dans l'état d'hypnotisme." *Revue philosophique* 21 (1886): 525–531.

Braude, Stephen E. "The Thoughtography of Ted Serios." In *The Perfect Medium: Photography and the Occult*, edited by Clément Chéroux, Andreas Fischer, Pierre Apraxine, Denis Canguilhem, and Sophie Schmit, 155–169. New Haven: Yale University Press, 2005.

Brottman, Mikita, Clément Chéroux, Mark Alice Durant, Emily Hauver, Ellie Howard, and Beth Saunders. *Ted Serios: The Mind's Eye*. Los Angeles: Atélier Editions, 2023.

Chéroux, Clément. "Photographs of Fluids." In *The Perfect Medium: Photography and the Occult*, edited by Clément Chéroux, Andreas Fischer, Pierre Apraxine, Denis Canguilhem, and Sophie Schmit, 114–138. New Haven: Yale University Press, 2005.

Christian, Margareta Ingrid. “Cameraless Photography and Its Imponderable Media.” *History of Photography* 42, no. 4 (2018): 319–337.

del Pilar Blanco, Maria. “The Haunting of the Everyday in the Thoughtographs of Ted Serios.” In *Popular Ghosts: The Haunted Spaces of Everyday Culture*, edited by Maria del Pilar Blanco and Esther Peren, 253–267. London: Continuum, 2010.

Duchatel, Edmond. “Quelques nouvelles experiences de photographie de la pensée.” *Annales des sciences psychiques* 24, no. 4 (1914): 108–123.

Eddy, Matthew Daniel. *Media & the Mind: Art, Science & Notebooks as Paper Machines, 1700–1830*. Chicago: University of Chicago Press, 2023.

Eliot, T.S. “The Love Song of J. Alfred Prufrock.” In *Prufrock and Other Observations*, 9–16. London: The Egoist Ltd, 1917.

Felten, Sebastian, and Christine von Oertzen, eds. “Histories of Bureaucratic Knowledge.” Special issue, *Journal for the History of Knowledge* 1, no. 1 (2020).

Fischer, Andreas. “‘La Lune au front’: Remarks on the History of the Photography of Thought.” In *The Perfect Medium: Photography and the Occult*, edited by Clément Chéroux, Andreas Fischer, Pierre Apraxine, Denis Canguilhem, and Sophie Schmit, 139–154. New Haven: Yale University Press, 2005.

Freudenberg, Franz. “Gedankenphotographie in Japan.” *Psychische Studien* 41, no. 4 (1914): 214–226.

Fukurai Tomokichi 福来友吉. “Iwan to suru kokoro” 言はんとする心 [The Mind that Seeks to Speak]. *Shinri kenkyū* 心理研究 [Psychological Research] 2, no. 8 (1912): 115–129.

———. “Motora-sensei no shinri kenkyū ni okeru ippanteki ikō to sono kekka” 元良先生の心理研究に於ける一般的意向とその結果 [The General Intentions and Results of Professor Motora’s Psychological Research]. In *Motora hakase to gendai no shinrigaku* 元良博士と現代の心理学 [Dr. Motora and Contemporary Psychology], edited by Ko-Motora hakase tsuitō gakujutsu kōenkai 故元良博士追悼学術講演会, 73–115. Tokyo: Kōdōkan 弘道館, 1913.

———. *Saimin shinrigaku gairon* 催眠心理学概要 [General Theory of Hypnosis Psychology]. Tokyo: Seibidō 成美堂, 1905.

———. *Shinrei to shinpi sekai* 心霊と神秘世界 [Spirit and the Mystical World]. Kyoto: Jinbun shoin 人文書院, 1932.
———. "Shinrigaku" 心理学 [Psychology]. In *Sōtōshū kyōdō kōshūin kōen shū, vol. 1* 曹洞宗教導講習院講演集 [Anthology of Sōtō School Training Institute Lectures], edited by Sōtōshū Kyōdō Kōshūin 曹洞宗教導講習院, 241–326. Tokyo: Kōmeisha 鴻盟社, 1904.
———. "Study on Nengraphy." *Fukurai shinrigaku kenkyūjo hōkoku* 3, no. 3 (1952): 5–16.
———. *Tōshi to nensha* 透視と念写 [Clairvoyance and Thoughtography]. Tokyo: Tōkyō Hōbunkan 宝文館, 1913.
———. *The Experiment of the Thought-graphy with Japanese Mediums*. N.p., 1928.
Gitelman, Lisa. *Scripts, Grooves, and Writing Machines: Representing Technology in the Edison Era*. Stanford: Stanford University Press, 1999.
Godart, G. Clinton. *Darwin, Dharma, and the Divine: Evolutionary Theory and Religion in Modern Japan*. Honolulu: University of Hawai'i Press, 2017.
Gordin, Michael. *On the Fringe: Where Science Meets Pseudoscience*. New York: Oxford University Press, 2021.
Grünfelder, Romeo. *Ted Serios: Serien*. Hamburg: TEXTEM Verlag, 2016.
Guo Ruoxu 郭若虚, *Tu hua jian wen zhi* 図画見聞記 [An Account of Experiences in Painting]. In *Chinese Text Project*, edited by Donald Sturgeon, 2011. http://ctext.org.
Hall, G.S., and Yūjirō Motora. "Dermal sensitiveness to gradual pressure changes." *American Journal of Psychology* 1, no. 1 (1887): 72–98.
Hamano Shiho 浜野志保. *Shashin no bōdārando: X-sen, shinrei shashin, Nensha* 写真のボーダーランド: X 線, 心霊写真, 念写 [Borderlands of Photography: X-rays, Spirit Photographs, and Thoughtographs]. Tokyo: Seikyūsha 青弓社, 2015.
Haruna Yoshishige 春名好重. "Edo jidai no shoron" 江戸時代の書論 [Theories of Calligraphy in the Edo Period]. In *Sho no Nihonshi* 書の日本史 [Calligraphy's Japanese History], vol. 6, edited by Imai Shōji 今井庄次, 63–68. Tokyo: Heibonsha 平凡社, 1975.

Hsiung, Hansun. “The Gentleman, the Detective, and the Housewife: Sensory Worlds of Experiment in Japanese Thoughtography, 1910–1911.” *Nuncius* 39, no. 2 (2024): 390–416.

Ichiyanagi Hirotaka 一柳廣孝. *“Kokkuri-san” to “senrigan”: Nihon kindai to shinreijutsu* “こっくりさん” と “千里眼”: 日本近代と心霊学 [Kokkuri-san and Clairvoyance: Modern Japan and Spiritualism]. Tokyo: Kōdansha 講談社, 1994.

_____. *Saiminjutsu no Nihon kindai* 催眠術と日本近代 [Hypnotism’s Japanese Modernity]. Tokyo: Seikyūsha 青弓社, 2006.

_____. “Senrigan jiken wa kagaku no bunseki taishō tariuru ka: Shinrigaku no kyōkaisen o meguru ronsō” 千里眼事件は科学の分析対象たり得るか: 心理学の境界線をめぐる論争 [Can the Senrigan Incident Be an Analytical Object of Science? Debates on the Boundaries of Psychology]. In *Meiji Taishō Nihon no kagaku shisōshi* 明治・大正日本の科学思想史 [History of Scientific Thought in Meiji-Taishō Japan], edited by Kanamori Osamu 金森修, 369–410. Tokyo: Keisō shobō 勁草書房, 2017.

Jacobowitz, Seth. *Writing Technology in Meiji Japan: A Media History of Modern Japanese Literature and Visual Culture*. Cambridge: Harvard University Asia Center, 2016.

James, William. *Psychology*. New York: Henry Holt & Co., 1892.

Kafka, Ben. *The Demon of Writing: Powers and Failures of Paperwork*. Princeton: Princeton University Press, 2012.

Kagoshima Shinnosuke 篭嶋真ノ介. “Nensha Shashin no mediashi teki kōsatsu” 念写写真のメディア史的考察 [A Media-Historical Investigation of Nensha Photographs]. MA diss., Waseda University, 2006.

Kamoi Takeshi 鴨居武. “Densō Shashin” 電送写真 [Phototelegraphy]. *Tōkyō Kagakukai shi* 東京化学会誌 [Journal of the Tokyo Chemistry Association] 29, no. 11 (1908): 1167–1173.

Kittler, Friedrich. *Discourse Networks 1800/1900*. Translated by Michael Metteer with Chris Cullens. Stanford, CA: Stanford University Press, 1990.

———. *Grammophone, Film, Typewriter*. Translated by Geoffrey Winthrop-Young and Michael Wutz. Stanford, CA: Stanford University Press, 1999.

"Kōbe no shōnen senrigan" 神戸の少年千里眼 [A Kobe Boy's Clairvoyance]. *Asahi Shinbun (Tokyo)* 朝日新聞, January 6, 1911.

Kokugo Chōsa Iinkai 国語調査委員会. *Katakana hiragana yomigaki no nan'i ni kan suru jikken hōkoku* 片仮名平仮名読ミ書キノ難易ニ関スル実験報告 [Report of Experiments Concerning the Ease and Difficulty of Reading and Writing in Katakana and Hiragana]. Tokyo: Kokugo Chōsa Iinkai 国語調査委員会, 1904.

Komori Yōichi 小森陽一. *Kōzō toshite no Katari* 構造としての語り [Narrative as Structure]. Tokyo: Seikyūsha 青弓社, 2017.

Koike Takehiko 小池壮彦. *Shinrei Shashin* 心霊写真 [Spirit Photographs]. Tokyo: Takarajimasha 宝島社, 2000.

Korn, Arthur. *Bildtelegraphie*. Berlin and Leipzig: Walter de Gruyter & Co., 1923.

Kuzuoğlu, Uluğ. "Telegraphy, Typography, and the Alphabet: The Origins of the Alphabet Revolutions in the Russo-Ottoman Space." *International Journal of Middle East Studies* 52, no. 3 (2020): 413–431.

Latour, Bruno. *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press, 2005.

Lee, Yeounsuk. *The Ideology of Kokugo: Nationalizing Language in Modern Japan*. Translated by Maki Harano Hubbard. Vancouver: UBC Press, 2021.

Liu Na 刘娜, and Li Yanping 李艳平. "Beilan laihua yu chuanzhen jishu zai Zhongguo de zhaoqi lishi" 贝兰来华与传真技术在中国的早期历史 [Belin's Visit to China and the Early History of Phototelegraphy in China]. *Zhongguo keji shi zazhi* 中国科技史杂志 [Journal of the History of Chinese Science and Technology] 31, no. 2 (2010): 176–186.

Long, Hoyt J. "(Il)legibility and Handwriting in Meiji Letters: A Media History," *positions: asia critique* 25, no. 2 (2017): 255–292.

Maekawa Osamu 前川修. "Shashinron toshite no shinrei shashinron: shinrei shashon no tadashii tsukasekata" 写真論としての心霊写真論: 心霊写真の正しい憑かせ方 [A Theory of Spirit Photographs as a Theory of Photography: The Correct Way to be Possessed by Spirit Photographs]. In *Shinrei shashin wa kataru* 心霊写真は語る [Spirit Photographs Speak], edited by Ichiyanagi Hirotaka 一柳廣孝, 18–62. Tokyo: Seikyūsha 青弓社, 2004.

Mitchell, W. J. T. *Iconology: Image, Text, Ideology*. Chicago: University of Chicago Press, 1986.

Motora, Yūjirō. *An Essay on Eastern Philosophy*. Leipzig: R. Voigtlander, 1905.

———. “Ein experiment zur einübung von aufmerksamkeit.” *Zeitschrift für kinderforschung* 16 (1911): 214–225.

———. “Essai sur la philosophie orientale. L’idée du moi dans la philosophie orientale.” *Revue de philosophe* 5, no. 7 (1905): 32–74.

———. “Jidō no chūi no jikken” 児童の注意の実験 [Experiment on Attention in Children]. *Tōyō gakugei zasshi* 東洋学芸雑誌 [Journal of Oriental Arts and Sciences] 26 (1909): 243.

———. “Sanzen nisshi” 参禅日誌 [A Diary of Zen Meditation Practice]. In *Motora Yūjirō chosakushū* 元良勇次郎著作集 [Collected Works of Motora Yūjirō], vol. 6, edited by Ōyama Tadashi 大山正 and Ōizumi Hiroshi 大泉溥, 349–357. Tokyo: Kuresu shuppan クレス出版, 2014.

———. “Yoko-yomi tate-yomi no rigai ni tsuite” 横読み縦読みの利害に就て [On the Benefits and Harms of Horizontal versus Vertical Reading]. *Tōyō gakugei zasshi* 東洋学芸雑誌 [Journal of Oriental Arts and Sciences] 22, no. 165 (1895): 279–286.

———. “Zen to shinrigaku no kankei” 禅と心理学の関係 [The Relation between Zen and Psychology]. In *Motora Yūjirō chosakushū* 元良勇次郎著作集 [Collected Works of Motora Yūjirō], vol. 6, edited by Ōyama Tadashi 大山正 and Ōizumi Hiroshi 大泉溥, 358–364. Tokyo: Kuresu shuppan クレス出版, 2014.

Müller-Sievers, Helmut. *The Cylinder: The Kinematics of the Nineteenth Century*. Berkeley: University of California Press, 2012.

Nagayama Yasuo 長山靖生. *Senrigan jiken: kagaku to okaruto no Meiji Nihon* 千里眼事件: 科学とオカルトの明治日本 [The Senrigan Incident: Meiji Japan’s Science and Occult]. Tokyo: Heibonsha 平凡社, 2005.

Nakao Maika 中尾麻伊香. *Kagakusha to mahōzukai no deshi: Kagaku to hikagaku no kyōkai* 科学者と魔法使いの弟子: 科学と非科学の境界 [Scientists and the Sorcerer’s Apprentice: The Demarcation of Science and Non-Science]. Tokyo: Seidosha 青土社, 2019.

Okada Sen 岡田鋋. “Tegami to denshinbun” 手紙と電信文 [Letters and Telegrams]. *Tegami zasshi* 手紙雑誌 [Epistolary Magazine] 2, no. 4 (1905): 5–6.

Ōkubo Ryō 大久保遼. *Eizō no arukeorojī: Shikaku riron, kōgaku media, eizō bunka* 映像のアルケオロジー: 視覚理論, 光学メディア, 映像文化 [The Archaeology of Screen Images: Visual Theory, Optical Media, and Screen Image Culture]. Tokyo: Seikyūsha 青弓社, 2015.

Ōnishi Yoshiakira 大西克知. *Gakusei kinshi no hito yobōsaku* [学生近視の一予防策]. Tokyo: Ōnishi Ganka Iin 大西眼科医院, 1897.

Osaka Naoyuki 苧阪直行. *Jikken shinrigaku no tanjō to tenkai: jikkenki to shiryō kara tadoru Nihon shinrigaku shi* 実験心理学の誕生と展開: 実験機器と史料からたどる日本心理学史 [The Birth and Development of Experimental Psychology: Tracing the History of Japanese Psychology from Experimental Apparatuses and Sources]. Kyoto: Kyōtō Daigaku Gakujutsu Shuppankai 京都大学学術出版会, 2000.

Robertson, Craig. “Documents, Empire, and Capitalism in the Nineteenth Century.” In *Information: A Historical Companion*, edited by Ann Blair, Paul Duguid, Anja-Silvia Goeing, and Anthony T. Grafton, 152–173. Princeton: Princeton University Press, 2021.

———. *The Filing Cabinet: A Vertical History of Information*. Minneapolis: University of Minnesota Press, 2021.

Sasayama Baian 笹山梅庵. *Hitsudō keiko hayagakumon* 筆道稽古早学問 [The Quick Study of Calligraphic Practice]. Osaka: Akita Tauemon, late Edo.

Satō Tatsuya サトウタツヤ. “Motora Yūjirō no sanzen taiken to sono yoha: tōyō teki jiga o shinrigaku teki ni kangaeru michi” 元良勇次郎の参禅体験とその余波 : 東洋的自我を心理学的に考える道 [Motora Yūjirō’s Zen Meditation Experiences and Their Impact: The Path of Thinking through the Oriental Self Psychologically]. *Shinrigaku shi shinrigaku ron* 心理学史・心理学論 [History of Psychology and Psychological Theory] 3 (2001): 11–20.

Shimojō Naoki 下條直幹. “Jitai oyobi moji no kairyō” 字體及び文字の改良 [The Reform of Script and Characters]. *Tegami zasshi* 手紙雑誌 [Epistolary Magazine] 2, no. 4 (1905): 6–10.

“Supernormal Photography.” *Light* 48, no. 2497 (1928): 541.

Takasuna, Miki. “The Fukurai Affair: Parapsychology and the History of Psychology in Japan.” *History of the Human Sciences* 25, no. 2 (2012): 149–164.

Terazawa Ryū 寺沢龍. *Tōshi mo nensha mo jijitsu de aru: Fukurai Tomokichi to senrigan jiken* 透視も念写も事実である: 福来友吉と千里眼事件 [Clairvoyance and Thoughtograph are Facts: Fukurai Tomokichi and the Senrigan Incident]. Tokyo: Shinchōsha 新潮社, 2001.

Tōkyō Teikoku Daigaku Bunkadaigaku Shinrigaku Kyōshitsu 東京帝国大学文科大学心理学教室, ed. *Jikken shinri shashin chō* 実験心理写真帖 [Album of Experimental Psychology]. Tokyo: Kōdōkan 弘道館, 1910.

Tsuchiya Michio 土屋道雄. *Kokugo mondai ronsō shi* 國語問題論爭史 [History of Debates over National Language]. Tokyo: Tamagawa Daigaku shuppanbu 玉川大学出版部, 2005.

Wu, Yu-chuan. “Techniques for Nothingness: Debate over the Comparability of Hypnosis and Zen in Early-Twentieth-Century Japan.” *History of Science* 56, no. 4 (2018): 470–496.

Yano Jirō 矢野二郎. “Denshinbun to jitsuyōjō no tegami” 電信文と実用上の手紙 [Telegrams and Letters from a Practical Perspective], *Tegami zasshi* 手紙雑誌 [Epistolary Magazine] 2, no. 3 (1905): 5–6.

Yasuda Toshiaki 安田敏朗. “*Kokugo” no kindaishi: Teikoku Nihon to kokugogakushatachi* “国語”の近代史: 帝国日本と国語学者たち [The Modern History of “National Language”: Imperial Japan and Scholars of National Language]. Tokyo: Sangensha 三元社, 2002.