

Models for the Blind

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Along with Braille and other forms of raised letters, the use of physical objects played a major role in the development of educational principles for blind and visually impaired people in the nineteenth century. As a substitute for images, objects defined the core of the blind pedagogical task to find alternative ways of teaching people who were unable to make sense of the world through sight. Consequently, objects laid emphasis on the sense of touch, indicating the complex relation between blindness, perception, and conceptual understanding. This article deals with the objects used in blind pedagogical lessons from two opposite angles. First, I discuss how teachers who worked in blind schools considered the importance of three-dimensional representations and their intrinsic connection to touch. For this I draw on textbooks, periodical literature, and archival material that refer to ideas, arguments, and debates on objects and touch. I am aware that I use sources in a somewhat abrupt way. However, my intention is not to provide an in-depth analysis of the curriculum of a particular blind school. Rather, I want to trace how objects that were often procured from completely different contexts were made an integral part of a pedagogical regime. As I discuss, written sources that illustrate how the visually impaired themselves felt about the pedagogical objects are virtually non-existent. In light of this lack of evidence, the second part of the article attempts to bring the objects themselves and the people who touched them into play. Falling back on a historical collection of artefacts related to blindness and visual impairment, I approach a selected object as if it were an empirical source in its own right. Can material objects shed light on the gaps in historical archives or will they rather open the door ajar to the imaginary and lead the historian astray?

Tangible objects, as manifested in the historical collections kept at the Valentin Haüy Museum in Paris and at the Perkins School for the Blind in Boston, were integrated early on as pedagogical aids in the education of blind people. However, if we turn to two of the fundamental texts on the subject of blind people's rights to education — the essays of the French pedagogues Valentin Haüy (1786) and Sébastien Guillié (1817)

— not much is mentioned about pedagogical objects. Both Haüy and Guillié stressed the importance of education to improve the lives of blind people in society. Haüy explicitly highlighted the significance of literacy. It was above all through books printed in raised types that knowledge of mathematics, language, history, and geography could be imparted to the visually impaired.¹ Guillié, too, whose ideas were akin to Haüy's, stressed the importance of literacy while at the same time underlining the vital role that the sense of touch played for blind people. Before studying the conventional signs of the alphabet, Guillié argued, blind children should become familiar with the materiality and geometry of letters. This was simply done by touching the alphabet and learning to discern its different forms, points, semicircles, circles, edges, and lines.² According to Guillié, touch was 'the natural language of the blind, their instrument of confidence, their most excellent sense, their universal sense so to speak'.³ Given this strong emphasis on touch, one would have perhaps expected to find a chapter devoted to the touching of objects in Guillié's book. No such chapter was included, however. And neither does the frontispiece, with its symbolic framing of the cultivated blind (Guillié also devoted several chapters to renowned blind people), display any references to pedagogical objects (*Fig. 1*). We see two blind persons, a woman and a man, engaged in typesetting and finger reading. Musical notes, instruments, maps, and a globe encircle them, but except for a bust representing the English scientist Nicholas Saunderson, who lost his eyesight at the age of one, no three-dimensional models are depicted. Like Haüy, Guillié's pedagogical approach was strongly focused on the promotion of literacy and the emancipatory gains of reading and writing.⁴ When the education of blind people established itself more widely as a pedagogical discipline in the latter half of the nineteenth century, objects became a more integrated part of the teaching programme and were often used to bring out particular epistemological ideas.

¹ Valentin Haüy, *Essai sur l'éducation des aveugles* (Paris: [n. pub.], 1786), p. 7.

² Sébastien Guillié, *Essai sur l'instruction des aveugles*, 2nd edn (Paris: [n. pub.], 1820), pp. 154–55.

³ Guillié, p. 14 (author's own translation).

⁴ For more on this, see Zina Weygand, *The Blind in French Society from the Middle Ages to the Century of Louis Braille*, trans. by Emily-Jane Cohen (Stanford: Stanford University Press, 2009).



Fig. 1: Docteur (Sébastien) Guillié, *Essai sur L'Instruction des Aveugles* (Paris, 1817). RNIB Collection A10 RESLIBb10006330. Reproduced with the kind permission of the RNIB.

If we look at the Institute for the Blind and the Partially Sighted in Copenhagen, founded in 1858, the significance of objects in the education of blind children and adolescents was emphasized at an early stage. A notification in the proceedings published in 1866 reported on a collection of pedagogical objects that the Institute had begun to gather.⁵ Interestingly, the collection was mentioned in connection with the teaching method

⁵ *Beretning om det Kongelige Blindeinstitut for Skolaaret 1864/65* (Copenhagen: Schultz, 1866), p. 7.

that put pure perception in first place, without involvement of linguistic guidance. The German concept of *Anschauung*, which derived partly from Kantian philosophy and which had been adapted to educational issues by the Swiss pedagogue Johann Heinrich Pestalozzi, constituted a fundamental keystone of the pedagogical programme of the Copenhagen Institute. *Anschauung*, or sense intuition in English, was to be carried out as far as possible in direct communication with things themselves. But since many different kinds of objects could not be experienced first hand, particularly not through touch, models had to be used as substitutes. Pedagogical objects were constructed in many different materials and sizes, and represented a large variety of the plant and animal kingdoms as well as objects and phenomena from physics, chemistry, geography, and everyday contexts. The proceedings of the Copenhagen Institute for 1866–67 reported that one of the teachers had fabricated a collection of animal models in papier mâché which would complement that of stuffed animals.⁶

When studying the ways in which nineteenth-century pedagogues and teachers approached the touch of the blind, a contradiction emerges. On the one hand, teachers, especially from Germanic-speaking countries such as Germany and Denmark, repeatedly stressed the importance of confronting pupils with undistorted phenomena via *Anschauung* and of using models that conveyed a three-dimensional, tactile idea of the object in question. These exercises were not only aimed at acquiring knowledge; they also filled a socio-psychological role: to help blind people overcome their fears and anxieties of things that were unknown to them. Hence, a German teacher argued for the necessity of touching real animals, or models in cases where the pupils could not be persuaded to touch the living beings.⁷ Evidently, this form of tactile exploration presupposed an independent access to the object that was to be perceived. Pupils were to discover the object of *Anschauung* themselves, with as little interference from the teachers as possible. On the other hand, the international proceedings of the educators of blind and visually impaired people bore evidence of how the tactile sense became the subject of far-reaching scrutiny with obvious disciplinary and regulatory implications. A clear tendency

⁶ *Bereting om det Kongelige Blindeinstitut for Skolaaret 1866/67* (Copenhagen: Schultz, 1867), p. 16.

⁷ *Blindenlehrer-Kongress zu Frankfurt am Main, Juli 1882* (Frankfurt a.M: Verlag des Kongress-Komitees, 1882), p. 203.

was the use of medical and scientific concepts in order to better analyse and understand how blind people touch.

Already, the first European congress for teachers of the blind included scientific descriptions of the anatomy and physiology of touch. Distinction was made between the sense of touch as a whole and the tactile nerve by means of which sensation and perception is brought about.⁸ The conceptual dissection of touch also comprised the activity of the muscle sense and the fatigue that followed upon the combustion of muscle force. These were terms that had been made popular with the breakthrough of laboratory medicine and its reconceptualization of the body as a physico-chemical aggregate in the mid-1800s. A telling example of how the language of medical science influenced the general understanding of the body is to be found in a treatise on blindness written by the blind teacher William Hanks Levy, in which the sensory nerves were compared to the wires linked to an electric battery. Levy used the image of the battery to maintain the belief that blind people were gifted with a more sensitive touch than sighted people. For the blind, the power of the battery was thrown into four wires instead of five, with the result that the amount of nervous energy became more condensed in the wire that conducted tactile power.⁹

Another example of what perhaps could be called the medicalization of the blind touch was the concern expressed at the Dresden congress of 1876 that embossed books printed with substandard paper could cause harmful strain of the tactile nerve.¹⁰ The congress appointed a committee that would look into the matter and clarify its physiological and pathological implications. Viewed from a social-historical perspective, the trend to explain the tactile perception of blind people by dint of scientific concepts reflects a wider public unease with blindness. As Vanessa Warne argues in her forum article on blind literacy, the nocturnal reading habits of visually impaired people came to be regarded as a threat to the moral and hygienic standards of Victorian society.¹¹ Not only did the practice of finger reading in bed evoke unsettling associations with auto-erotic touch-

⁸ *Der Erste Europäische Blindenlehrer-Congress in Wien* (Vienna: Verlag des Ständigen Congress-Comites, 1873), p. 89.

⁹ W. Hanks Levy, *Blindness and the Blind; or, A Treatise on the Science of Typhology* (London: Chapman and Hall, 1872), p. 63.

¹⁰ *Der II. Europäische Blindenlehrer-Congress in Dresden am 25, 26 und 27 Juli 1876* (Dresden: Congress-Comite, 1876), p. 36.

¹¹ See Vanessa Warne, 'Between the Sheets: Contagion, Touch, and Text', in this issue of 19.

ing; in accordance with the new models of germ theory put forward by bacteriologists, tactile books were also considered as potential sources of infection that threatened to spread contagious diseases among the blind community. What Warne describes as an anxious attitude towards the development of a raised-print book culture in the nineteenth century can also be found within the institutional walls of blind pedagogy where sighted teachers endeavoured to ensure that the visual world was correctly comprehended through tactile discernment.

The tension between a more holistic approach — *Anschauung* — to tactile sensation and a medical reductionist attempt to pin down the nature of a sense organ reflects larger ideological trends in the history of Western science. To find that these two traditions were used concurrently in blind schools is not surprising. As new institutes were established in the course of the nineteenth century, the education of blind and visually impaired people became a legitimate profession with its own recurrent meetings and published proceedings. At these meetings, educators exchanged ideas on pedagogical methods, medical and psychological theories, teaching aids, and other practical tips that could facilitate teaching. With respect to models, most institutes agreed on the importance of finding out through active touch but the views on how this was to be accomplished often differed from school to school. Typically, different opinions on how models were to be used concealed divergent attitudes towards touch and what the sense of touch actually meant for the blind. This can be illustrated if one compares two different accounts from the 1870s and 1880s: one from a German context and the other from a British one. At the Dresden congress of 1876, Simon Heller, director of the blind institute in Vienna, gave a talk on what he called the principle of immediacy in the blind school. According to Heller, touch brought the blind into direct contact with the essence of things.¹² Heller advocated self-active sense intuition — ‘*selbstthätige Anschauung*’ — as the method to be used in blind education. Pupils were to be given the object of knowledge in their hands and to discern the essential features themselves (Simon Heller, p. 97). Also, Samuel Neil, rector of the blind school in Edinburgh, recognized the profound significance that touch had for blind people. In a presentation at a conference in York in 1883, Neil talked about how the culture of

¹² Simon Heller, ‘Das Princip der Unmittelbarkeit in der Blindschule’, in *Der II. Europäische Blindenlehrer-Congress in Dresden am 25, 26 und 27 Juli 1876*, pp. 88–104 (p. 89).

the blind gave preference to objects that could be examined tactilely.¹³ Consequently, a well-stocked collection of miscellaneous objects that could be employed for didactic reasons was a crucial element in the education of blind people. Thus far, Neil and Heller seemed to represent similar views on touch and its pedagogical role for the blind and the visually impaired. Yet there were important differences. Whereas Heller believed that the blind obtained knowledge of the external world intuitively through touch, Neil was more inclined to regard touch as a sense that reconstructs impressions of exterior objects discretely in the mind. Unlike the eye, which merges the perceived thing with the conceptual faculties of the mind into one integral representation, the sense of touch builds up its references to the outer world bit by bit, Neil argued. This piecing together of tactile-sense data called for a more organized approach to objects and models than Heller's intuitive perception of things and their unique qualities. Neil advocated a series of lessons that would elucidate the sense of touch from every possible angle, what he also referred to as an 'alphabet of touch sensation' (pp. 75–76).

Given the prominent — and contested — role that three-dimensional objects played in the education of visually impaired people, one can ask to what extent they can be considered as pedagogical models. As Soraya de Chadarevian and Nick Hopwood write, the meaning of 'models' has changed over time just as the ways in which models embody and display knowledge have.¹⁴ However, as the authors also point out, three-dimensional objects share 'certain visual and tactile properties' that clearly distinguish them from the ways flat images are used as models (p. 3). This was particularly the case with the objects used by teachers such as the aforementioned Heller and Neil. For the latter, the well-stocked museum that provided a material basis for blind schools consisted precisely of models that accentuated the tactile properties of things. Altogether, these properties covered different tactile qualities such as the texture, resistance, and weight of things, the spatial correlation between the model and the original object, and the model's general feeling of lifelikeness. Looking at the use of models in late nineteenth-century mathe-

¹³ S. Neil, 'The Psychology of Blindness, and the Education and Training of the Blind', in *Yorkshire School for the Blind: Report of the Jubilee Celebration and of the Conference of Managers & Teachers* (York: 'Daily Herald' Office, 1883), pp. 72–83 (p. 74).

¹⁴ Soraya de Chadarevian and Nick Hopwood, 'Dimensions of Modelling', in *Models: The Third Dimension of Science*, ed. by Soraya de Chadarevian and Nick Hopwood (Stanford: Stanford University Press, 2004), pp. 1–15 (p. 3).

matics, the historian Herbert Mehrtens writes that “model” is a relational term, indicating a form of representation of something, not a replication but an intentional selective construction of a new thing meant to stand for something else’.¹⁵ Obviously, there is a capital difference between the abstract language of mathematics and the everyday objects that constituted the most common references in the blind school. But while some objects that were used tactilely are better termed as replicas, other pedagogical objects clearly transferred, not to say transformed, selective aspects of the original referent so as to fit better with the realm of touch.

An issue that intrinsically stood out here concerned the relation between the visual and the tactile, both in terms of exterior material representation and the ability to grasp concepts and ideas. If we first turn to the question of the mental faculties, it is striking to what degree a visual vocabulary was used to define how blind people conceive of things. Despite the strong emphasis on touch as a pedagogical method, the mental aspect of the learning ability was frequently described in visual words: the blind made intuitive pictures of objects, knowledge took the form of mental images in the mind, or blind children created their own fantasy images of things. Even if one takes into account how visually biased our concept of the mind is, the widespread use of visual terms in this particular context is nonetheless noteworthy.

Another similar explanation for this overall view of the mind of blind people as innately visual has to do with the anxiety over not having control over the pedagogical procedure. Compared to Haüy and Guillié, whose interest in touch was primarily emancipatory, pedagogues during the latter half of the nineteenth century increasingly placed touch within the confines of institutional adjustment, order, and control. The above proposal to establish an alphabet of touch sensation is characteristic of this effort to ascertain the various ways in which touch expressed significance for the blind. At the turn of the century, the mapping of the blind touch reached its ultimate conclusion with the German psychologist Theodor Heller, who proposed an influential distinction between analytical touch and synthetic touch in his study on blindness.¹⁶ To be sure, this preoccupation with the touch of the blind was an attempt to unfold the underlying purpose of a tacit sense within the jurisdiction of pedagogy and science. In this sense, the study of blind people’s touch was linked as

¹⁵ Herbert Mehrtens, ‘Mathematical Models’, in *Models*, ed. by de Chadarevian and Hopwood, pp. 276–306 (p. 279).

¹⁶ Theodor Heller, *Studien zur Blindenpsychologie* (Leipzig: Engelmann, 1904).

much to the visual metaphors of the mind as to the models employed in teaching.

When it comes to the question of the models as such, one can argue that they oscillated between the things they referred to, the manners in which teachers imagined how blind people perceive the world, and the imagination of the blind themselves. Due to the nature of institutional archives, the historical papers preserved do not contain any sources that can shed light on how blind and visually impaired pupils experienced the models on a daily basis. Only the views and thoughts of the sighted teachers have been documented. This lack of insight into how blind people perceived the models would seem to mark a historical dead end. If not in the archives or in memoirs and autobiographical accounts, where then could one find first-hand perspectives on tactile models?

Recently, the curator Katherine Ott has argued for the significance of material culture as a means to retrieve the mute lives of disabled persons, a highly heterogeneous category of people who have in common the fact that they left behind barely any written records in archives and libraries. In light of this, historical objects like the tactile models of the blind that are preserved in blind-historical museums and medical history collections constitute a unique historical evidence since they give ‘tactility, flesh and animation to people with disabilities from the past’.¹⁷ Applied to the tactile models, Ott’s view certainly opens up new ways of understanding historical evidence. If the archive is silent about the models why not simply turn to the models themselves, especially if they are close at hand. A group of objects that provide a different perspective on the tactile model are the figures in clay that the pupils themselves shaped as a way to fathom the form and scale of things. Unlike the pedagogical models that provided tactile reference to the diversity of physical objects, the clay figures bear the palpable imprints of the visually impaired perceiver. With Ott, one could say that the figures testify to the lives of people who left few personal testimonies behind in the archives. Of course, we should not overlook the fact that teachers used clay modelling as a pedagogical control instrument; according to the examination protocol of the State Institute for the Blind and the Partially Sighted in Copenhagen, modelling

¹⁷ Katherine Ott, ‘Collective Bodies: What Museums Do for Disability Studies’, in *Re-Presenting Disability: Activism and Agency in the Museum*, ed. by Richard Sandell, Jocelyn Dodd, and Rosemarie Garland-Thomson (Abingdon: Routledge, 2010), pp. 269–79 (p. 272).

was introduced into the curriculum in the 1880s.¹⁸ In the end, the figures served a corrective function. Nonetheless, compared to the fixed models of animals, plants, geometrical figures, buildings, and other everyday objects that set the general framework for a tactile-based pedagogy, the clay figures, through their very materiality, indicate the historical presence of visually impaired individuals in the process of giving tactile form to their own impressions and sensations. In this sense, the figures introduce a subjective space within the pedagogical regime of the blind school and open up alternative approaches to the history of blindness. One can therefore ask whether the collection of clay figures could be used to give voice to the anonymous pupils at blind schools such as the one in Copenhagen.

In the follow-up study to *The Other Dickens*, her biography of Catherine Dickens, Lillian Nayder draws on a writing device for visually impaired people, the Gibson typograph, to review critically the relation between the authority of the printed, visible word and the supplementary techniques for tactile reading that circulated throughout the nineteenth century. As in her previous work, Nayder turns her attention towards the Dickens circle, this time to the blind Harriet Lovell, her friendship with Letitia Dickens, and her relation to Charles Dickens, who had a principal role in the publication of an embossed edition for visually impaired readers of his novel *The Old Curiosity Shop*.¹⁹ The theme of blindness is deeply embedded in the biographical accounts of the Dickenses, yet because Harriet's correspondence with Charles has not been preserved, Nayder is faced with a choice: either to accept that the letters are missing and refrain from further commentary, or to circumvent the archival void by means of narrative strategies such as fiction. It is here that the Gibson typograph comes in, as a factual object that provides Nayder with a tangible vehicle for the historical person Harriet, whose thoughts on being a visually impaired woman in Victorian society are fictively narrated in the form of pinprick writing. Although the Gibson typograph and the clay figures discussed above both relate materially to the history of blindness, they clearly differ in that the typograph was appropriately designed for writing, thereby linking its material form to language and the possibility

¹⁸ Statens Institut for blinde og svagsynede. Eksamensprotokoll. The Danish State Archives, Copenhagen, HB-010, 1862–1922.

¹⁹ See Nayder's article in this issue of 19: 'Blindness, Prick Writing, and Canonical Waste Paper: Reimagining Dickens in *Harriet and Letitia*'; and Heather Tilley, 'The Sentimental Touch: Dickens's *Old Curiosity Shop* and the Feeling Reader', *Journal of Victorian Culture*, 16 (2011), 226–41.

of verbal self-expression. One could of course argue that the clay figures, in their own way, point to the kind of cognitive self-expression that the act of *Anschauung* ultimately aimed at. This is at least an undeniable quality of their tangible testimony as historical objects. Regarded as historical sources, however, the clay figures seem to offer the historical imagination more resistance. It is difficult to imagine exactly how they could assist the historian in finding the long-silent voices of the people who made them. Nevertheless, if we were to insist on the use of material objects such as the clay figures for purposes of historical writing, we could perhaps approach them in the manner of Peter Sloterdijk. In the first volume of his *Spheres* trilogy, Sloterdijk outlines an archaeology of intimacy of certain forms of inner spatial being that force us to ‘recognize our inevitable conceptual helplessness as our only sure companion’ when confronted with them.²⁰ Despite Sloterdijk’s sensitive and poetical accounts of various forms of enlivened space spanning from antiquity to the nineteenth century and including non-Western ideas of intimacy also, touch never seems to quite catch his attention. Typically, if one may say so, his introductory example of an intimate sphere gives precedence to vision as he goes on to describe the space that arises when a child blows soap bubbles as an animated zone extended between the eye and the object (p. 19). In the case of blindness and the models discussed here, the animated zone appeared through the physical contact between hands and matter. This is also where the intimacy of the models rests, in the tactile quietude for which vision remains a peripheral thing.

²⁰ Peter Sloterdijk, *Spheres*, trans. by Wieland Hoban, 3 vols (Los Angeles: Semiotext(e), 2011–), I: *Bubbles* (2011), 62.