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Paper Dolls Medicine, Play, and Shibata Kōichi's Obstetric Phantoms

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Résumé de l'article

This article addresses the striking resemblance of a late nineteenth-century obstetrical simulator to contemporary commercial paper dolls. This period is often characterised in histories of medicine as one of increasing institutionalisation and professionalisation of childbirth through hospital training and state regulation. But this narrative is only part of the story. It marginalises the perspective of patients and midwives, and those outside of the geographic 'West', and it silences aspects of medical culture: social and caring relationships, emotion, play, and humour. While these aspects of medical history are less well represented in textual sources, material objects like Shibata Kōichi's 'Obstetrical Pocket-Phantoms' can help to give a fuller picture.

Beginning by situating Shibata's phantoms in the conventional histories of obstetric training and the intermedial spaces of the clinic and lecture theatre, I then ask how the phantoms might have been used and understood differently outside of these spaces. Using Robin Bernstein's concept of 'scriptive things', I employ a visual and material study of the objects, informed by the wider cultural contexts of dolls and popular print culture in Germany, the USA and Japan, to argue for a history of Shibata's phantoms as paper dolls that encouraged many forms of play: from learning and explorative, to mothering and caring, to humorous and subversive. By acknowledging that Shibata's phantoms would also have been recognised as paper dolls, I present a history that centres unrecorded aspects of, and under-studied agents in, medical culture.

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Paper Dolls: Medicine, Play, and Shibata Kōichi's Obstetric Phantoms

The history of midwifery has a source problem. While there is an absolute abundance of sources treating childbirth and medical attendance from the nineteenth century—medical books and journals, institutional records, political tracts, registers and casebooks—together they amount to only a partial history. Overwhelmingly male-authored and focused on the professional and institutional, they can lead to a conflation of obstetrics specifically with the whole wider world of childbirth. Many of the sources imply, if they do not outright state, that the work of women midwives and the social world of childbirth are of lesser importance. Historians must tread carefully to avoid repeating these implications, especially given the relative scarcity of corrective sources written by midwives and birthing people before the twentieth century. In this article, I propose material culture as one method for tackling this problem. Taking one of the many institutional, masculine sources for midwifery in the late nineteenth century, I read it against the grain, as an object bearing the traces not just of systematized masculine medical training, but of women's work, of affect, and of play.

The Phantoms

Shibata Kōichi's *Geburtsbüßliche Taschen-Phantome* (Obstetrical Pocket-Phantom, 1891, figure 1) comprises a brief printed pamphlet, a cardboard slot in the shape of a pelvis, and two articulated paper models of a fetus, one facing forwards and the other sideways. These models, one example of the obstetric simulators often called 'phantoms' in the eighteenth and nineteenth centuries, could be positioned and then passed through the pelvis to simulate the complete array of fetal presentations, and medical interventions.

To fit into their storage pocket, the phantoms must have their limbs folded up, so that when removed, they emerge curled, pinkish and vulnerable (figure 2). Small enough to lie on the palm of a hand, made of paper, ink and wire, they are light and thin, and so evoke the smallness and inconceivable lightness of the newly born. Yet, despite their material makeup, they do not feel all that fragile. Their admirable construction means they can be manipulated easily and smoothly and can withstand quite a lot of use without tearing or detaching. The remarkable mobility of the articulated limbs allows them to assume all kinds of possible, as well as

many impossible, postures. These objects invite play: they can dance, wave, perform bold acrobatics or shyly hide their faces. Like real neonates, Shibata's phantoms evoke sturdiness and fragility, health and vulnerability, an ageless seriousness and an endearing playfulness.

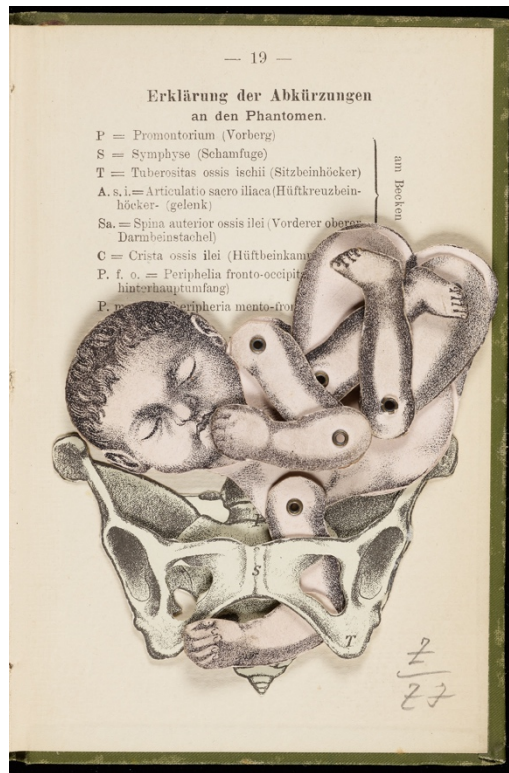


Figure 1
Shibata Koichi, 'Obstetric Phantom', lithograph on coloured paper with metal grommets. From Shibata, K. *Geburtshülffliche Taschen-Phantome* 3rd ed (Munich: J.F. Lehmann, 1895). The Bodleian Libraries, University of Oxford, Rc. F.84.

I introduce these objects with a description of their materiality and my embodied and affective reactions to them because, in this article, I explore what this materiality can tell us about the various, unrecorded historical uses of these objects. I will look beyond the rhetoric of

mechanistic anatomy and professionalized medical training to the invitations that these objects make for creative play and affective engagement. In doing so, I recenter the place of play and of emotion in late nineteenth-century medical training—a period in which medicine was increasingly characterized as disinterested, technical, and masculine. Indeed, the dichotomous nature of midwifery work: masculine and feminine; medical and 'natural'; professionalized and personal; serious and playful, is embodied in Shibata's phantoms. To get at the less spoken, more sublimated latter halves of these pairings, we must begin with the context of late nineteenth-century medicine and medical education.

Medical Models

Shibata's pamphlet was first published in 1891 in Germany while Shibata, a Japanese physician, was pursuing further study in the obstetric clinic of Franz von Winckel (Shibata 1891). Having met with moderate success, it went through several German editions, and was published in Japanese in Tokyo and in English in Philadelphia and Montreal between the 1890s and the 1910s.

Initially aimed at male medical students, the second edition of less than a year later was adapted to be useful also to women midwifery students. The text was lengthened and simplified, and 'birth figures' showing different fetal presentations were added. According to the various prefaces in its many editions, the pamphlet was intended: for private study by students; for use alongside other models and simulators in the lecture theatre; for comparison with the patient body in the



clinic; and for the assessment of midwives. It formed part of the intermedial equipment of a newly formalized, lengthy, technical, and masculine medical training (Bonner 1995, 251–79; La Berge and Hannaway 1998). This project was not unique to Munich or to Germany, but was taken up all over Europe and North America, as well as other parts of the world that were ‘Westernizing’ both voluntarily and under duress (Kim 2014).

The term ‘Western’ is problematic in many contexts, and certainly with regards to medical history, where it can imply both a fictional geographic location for a particular medical culture, and a universality of that culture across space and time. In this article, I use the term as a

Figure 2

Shibata Koichi, ‘Obstetric Phantoms’, lithograph on coloured paper with metal grommets. From Shibata, K. *Geburtshülffliche Taschen-Phantome* 3rd ed (Munich: J.F. Lehmann, 1895). The Bodleian Libraries, University of Oxford, Rc. F.84.

necessary, if flawed, shorthand for a global phenomenon that certainly did exist in the late nineteenth century. A shared medical culture grew up in Europe and North America, and was then exported globally, through publications, mass-produced objects, and the travelling of students and teachers between centers of learning. While each country, region, and individual experienced this ‘Western’ medicine differently, it was also something that was consciously standardized

between individuals and locations. A term is necessary, therefore, to distinguish it from other medical cultures, including those less formalized and prestigious, and learned medical cultures that originated in other places. To write a history of the 'Western' medical objects of this period, particularly when they were published in different places, is to recognize both the uniqueness of each country's medical culture, and the hegemony of the Imperial medical machine.

The character of Western medicine changed dramatically in the nineteenth century. Of particular relevance for studies of childbirth were the professionalization and specialization of medicine, the formalizing and lengthening of training and the establishment of obstetrics as a discipline. While some surgeons and physicians had attended labors before this, it was in the nineteenth century that much of Europe and North America saw medicine move to claim all the lucrative parts of practice—emergency and difficult cases, wealthy patients, hospital and teaching positions. Midwives, in most places, were retained to cover the bulk of deliveries and to provide nursing care, but were more firmly brought into the medical machine on a subordinate footing through training programs and medical regulation and licensing (Donnison 1977; Summers 1989; Fallwell 2013, 33–56; Bashford 1998; Brickman 1983; Nuttall 2012). State-level anxiety over population numbers and health were also rife late in the century, and often resulted in the training of midwives as social hygiene educators and protectors of infant health (Blom 2008; Steger 1994; Terazawa 2003; Al-Gailani 2018; Weindling 1989, 188–214; Fallwell 2013, 47–48). In Germany, more formalized

midwifery schools were established in many cities, where women could be trained and licensed before returning to their communities. The teachers and administrators at these schools were male physicians and surgeons. The educational content was of a similar brand to that provided to the male medical students, but for the midwives it was circumscribed, sometimes simplified, and emphasis was placed on the limits of their practice and the situations in which they would need to call a physician. There were also expectations around their continued care of both laboring women and infants that were not present for the medical students (Fallwell 2013, 156).

It is worth noting that while there were rigid gendered expectations around training and practice at this time, they were not unassailable. As Lynne Fallwell has shown, some midwives took initiative and authority over their own training, demanding better professional recognition (Fallwell 2013, 33–56; Donnison 1977, 88–115). On the other hand, while the standard model of childbirth attendance assumed a female midwife and a male obstetrician, by the 1890s women were able to train and practice as physicians in Germany, and many specialized in obstetrics (Bonner 1995, 309–24; Peitzman 2000; Wells 2001; Blake 1990). Moreover, in the world of practice, midwives often did much more than was set out for them in training, especially if they worked in rural areas where no doctors practiced, or in poor ones where other medical assistance was unaffordable (Badger 2014; Fallwell 2013, 33–56). So, training in childbirth attendance operated on a kind of two-tier system with midwifery and medical students engaging in the same world of medical knowledge, but with

different levels of access and support. Medical students often came from middling circumstances and could hope to make a good living. Midwifery students were mainly drawn from working class families and the prospects for lucrative employment were poor. Reputational problems relating to respectability and even personal safety also proved a barrier to entry for women from more affluent backgrounds (Fallwell 2013, 50–51).

In the USA, physicians more thoroughly recategorized childbirth attendance as a medical discipline, investing less in the training of midwives and aiming for a wider coverage by obstetricians. Of course, this was not a complete transformation, and many people were still attended by traditional midwives. In North America, these were often immigrants who had trained in other countries and served their own ethnic communities (Brickman 1983; Leavitt 2016, 87–115; Smith 2005). In Japan, where Shibata returned and published several Japanese editions of the *Phantome*, the government actively adopted Western medicine, and particularly German medicine, as part of its plan of ‘modernization’. While childbirth culture had been, and continued to be very different in Japan, the imposition of Western medical education and a Western-inspired system for regulating midwives meant that there were also striking similarities. Newly Westernized doctors moved, in turn, to Westernize and ‘rationalize’ midwifery practice, slowly squeezing out traditional practitioners in favor of new, young, medically trained midwives who returned to their communities to deliver babies but also to monitor populations and spread social hygiene practices (Terazawa 2003; Homei 2005; 2006; Steger 1994). In every

country where the *Phantome* was published then—Germany, Japan, the USA, and Canada—it formed part of a much broader project to medicalize and institutionalize midwifery, and to subordinate and control midwives.

It did so as one element in the wider intermedial realm of the medical school and museum. By the late nineteenth century, images, books, specimens, and models were considered absolutely crucial to medical education. These objects augmented what could be learned from the patient body in the clinic (Alberti 2011; Berkowitz 2011; Graciano 2019; Hallam 2016, 278–315; Owen 2016; Whiteley 2022; Wils, de Bont, and Au 2017). Central to midwifery training was the obstetric phantom, also called a manikin, mannequin, or machine. These objects were usually life-sized, three-dimensional simulators of the physiological processes of birth. They usually comprised the abdomen of a pregnant body with an accessible uterus into which the instructor could place a fetal doll or a preserved fetal cadaver, which the student could then ‘deliver’. They varied enormously in material, sometimes including human remains such as adult pelvises, fetal skulls and whole fetuses preserved in alcohol, but also other materials from basket-work and wood, to metal, leather and rubber. In the nineteenth century many included mechanical elements that simulated contractions, flexibility in the pelvis and coccyx, and elasticity of the perineal muscles, cervix, and vagina. These objects purported to simulate the material and physical conditions of labor. They worked both in an abstract mode, to help students envision fetal presentation and methods to assist in labor, and in a physical mode, replicating the haptic

experience of practice (figure 3) (Kosmin 2021; Lieske 2000; Owen 2016, 69–244; Stephens 2021).

Shibata presented his paper phantoms as a ‘pocket’ version of the large, expensive and three-dimensional phantoms that many students could only access for limited periods during teaching hours (Shibata 1893, 7; 1895, iv–v, 3; Owen 2016, 135). But, of course, Shibata’s models do not materially simulate the body in the same way as these larger, more three-dimensional phantoms did, so how were they useful and how were they used? Unfortunately, we do not have any direct records of how students approached these objects. Instead, I rely on what the author, editors, and reviewers wrote about them, a contextual knowledge of the material practices of medical learning, and my own experience of handling them.

Shibata, his mentor in Munich, Franz von Winckel, and the English language editors of the pamphlet Ada Howard-Audenried and J.C. Cameron, all weighed in on the usefulness of the phantom. According to them, it allowed students to think through the mechanics of labor and the different potential presentations. This might be done by students during private study, consolidating and reconstructing what they had learned on the full-sized phantom during lectures. It might, according to both Cameron and Winckel, be used by practitioners in clinical situations to translate what they felt at the cervix of a laboring patient into a fuller understanding of fetal presentation (Shibata 1903, 1; 1895, iii–iv). Winckel also notes that the phantoms would be useful tools for assessing midwives (Shibata 1895, v).

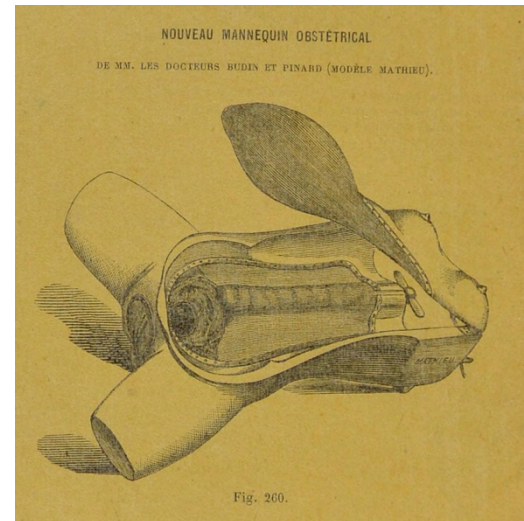


Figure 3
Anon., ‘Nouveau Mannequin Obstétrical de MM. les Docteurs Budin et Pinard’, wood engraving. In Mathieu, L., *Liste des instruments nouveaux créés et des instruments anciens modifiés depuis l'exposition de 1878* (Paris: Imprimeries Réunies, 1889), p.140. Wellcome Collection.

These objects could not simulate the haptics of birth, as the full-sized phantoms could. Rather they taught the abstract, mechanized view of birth and the body that had risen to prominence in the eighteenth century, one that could be fully understood and then assisted by the practitioner. Indeed, translating bodies into two-dimensional articulated paper is an expression, in itself, of the essentially abstract, mechanical, and intellectual knowledge required of the obstetrics student. As I have argued elsewhere, these abstracted images of childbirth, focusing on the positioning of the fetus and its relation to the shape of the pelvis, had been a central tool for developing midwifery knowledge and for establishing medicalized, mechanized epistemologies of the birthing body since at least the seventeenth century (Whiteley 2023, 87–180). Shibata’s phantoms seem to fall

consciously between these two media: the ‘birth figure’ illustration and the more material simulation of the birthing body, also known as the phantom or mannequin. Indeed, according to the Canadian editor J.C. Cameron, they form a bridge between the body itself and the book as a source of knowledge: he instructs his readers when in the clinic to examine their patient, then to refer to birth figures to see which presentation fits best what they have felt, then to use Shibata’s paper phantom to model what this might look like and, presumably, how the fetal body might be moved and aided to pass through the pelvis (Shibata 1903, 1).

This use of paper to make a model that was at once interactive, cheap, and accessible was not unique in this period. Paper was a crucial material for learning in all kinds of ways: from extensive notetaking, to making copies of illustrations in lectures, to making one’s own models (Hallam 2016, 310–15). It is likely that most medical students of the 1890s knew from existing training with illustrations, with paper objects and models, and with obstetric phantoms, how to make good use of Shibata’s phantoms. Indeed, the large number of editions, and the favorable reviews in the medical press, suggest that Shibata’s phantoms were a valued object of medical education (Owen 2016, 153–54; see, for example, Anon. 1891a; 1891b). While all simulations of childbirth were criticized by some factions of the medical establishment, either for their dislocation from the real body, or for the way they encouraged over-confident, rough, or precipitate interventions, they remained a core part of medical education in this period everywhere that Western systems were enacted.

Paper Dolls

This account of Shibata’s phantoms as technical tools of medical education is only part of their story. The people who encountered them were various: women as well as men, professionals, students, and potentially also patients. These groups differed in their levels of medical training, outlooks on their profession, experiences of childbirth, and relationships with patients. We can safely assume, then, that their approaches to and uses of Shibata’s phantoms would have been various too. Moreover, while paper models were a common part of medical training, it was not the only material and cultural context in which the phantoms worked. Not mentioned textually, but obvious materially, Shibata’s phantoms are paper dolls. In recognizing this, we can make use of Robin Bernstein’s concept of ‘scriptive things’, or objects that, within their cultural context, script particular kinds of interaction (Bernstein 2011, 69–91). As Bernstein points out, these scripts can be resisted as well as followed, but their presence inflects the object’s meaning. In this section, I argue that Shibata’s phantoms were scripted for contemporary users as dolls, as well as medical models.

Paper dolls had been part of European popular culture for well over a century by the time Shibata published his pamphlet, with origins in articulated ‘pantin’ and printed fashion dolls (Adams and Keene 2017; Mitchell and Reid-Walsh 2002, 175–77). Throughout the nineteenth century in Europe, printed paper dolls increased in number and diversity. Some were explicitly for children, a subset attended by moral stories (Field 2012). Some were specifically for boys and

involved fantastical costume changes. Others were aimed at adult women and even men as part of a growing participation in commercialized leisure activities. Adult women crafted elaborate fashions for paper dolls, exhibiting both their taste and their paper-crafting skills. In the 1890s, Germany was a dominant global player in the production and export of dolls, as well as medical culture (Ganaway 2018, 134). One innovation in the market for paper dolls that emerged in this period was a chromolithographed, articulated fashion doll, called ‘activated dolls’ by collectors (figure 4). Produced by the German firm Littauer & Bauer and exported internationally, these dolls had limbs articulated in the same manner as Shibata’s phantoms, and often came with kits of crêpe, tissue and lace for the production of elaborate outfits (Fawcett 1989, 138–55; Wallach 1982, 29–31). The availability of child, as well as adult, activated dolls suggests that maternal, nurturing or domestic play was also countenanced by producers. The articulations, presumably primarily allowing for different limb positions for the better demonstration different outfits, also encourage narrative and indeed comic play, evoking earlier ‘pantin’. These dolls, like many in this period, also contributed to the formation of cultures of racism and white supremacy (Bernstein 2011). The question of race and its relevance to Shibata’s phantoms is treated by Sonia Favi and myself elsewhere (Favi and Whiteley forthcoming).

It is possible that Shibata took inspiration from these paper dolls in the development of his phantoms, or that the publisher copied production techniques from the same source. We cannot be certain that Shibata, a foreigner who stayed

a relatively short time in Germany, knew of the resonances he had created, but the material similarities between the two genres, and the general popularity of the paper doll, make it likely. It is certain, however, that many users of the phantoms would have noted it. But what would these connections have meant to users in the late nineteenth century? By this time, paper dolls were one part of a rich doll culture in Europe and North America. There is space here only to briefly characterize the literature on this topic, but it is important to note that dolls by the 1890s carried several important associations: firstly, with commercial fashion and the problematics of vanity—both women and children used dolls to model or train their taste in fashion (Adams and Keene 2017, 102–18; Field 2012). Secondly, at the time and ever since, critics have noted the role of dolls in crafting gender identity. This is by no means simple, and while some have argued that dolls modelled passivity and objectification as crucial aspects of womanhood, other scholars see dolls also allowing girls to gain agency and control, and to engage in subversive and taboo-breaking play. Finally, dolls were a symbol of the increasing value placed on both childhood as a state separate from adulthood and play as of fundamental importance to childhood (Armstrong 1996; Flanagan 2009, 17–62; Formanek-Brunell 1993; Ganaway 2018; Marcus 2007, 111–66).

Some users of Shibata’s phantoms would have rejected or ignored these resonances with a world of feminine concerns, children’s play, and popular entertainment. Certainly, none of the reviews or adverts I have encountered mention this context. But this textual silence does not mean a

lack of awareness, or even necessarily disapproval. Rather, I argue, Shibata's production of an obstetric paper doll was a strategic response to the perceived needs and perspectives of his intended audience: students and midwives. Paper was cheap, so the models were financially accessible to medical and midwifery students. But they were also *culturally* more accessible than the large, three-dimensional, mechanical obstetric phantoms in school lecture theatres.

The full-sized phantoms so clearly rendered the female body passive, the object upon which the male agent practiced. They often made use of more 'masculine' coded materials—wood, metal, ceramic, rubber—and newly mechanized production processes. They often contained mechanical parts or included new patented inventions (see figure 3). In short, they were part of the masculine world of mechanical production, invention, and entrepreneurship. For midwives and midwifery students, who typically had more experience with the living female body in labor, these machines may have seemed less accessible or simply less appealing as a representation of the patient body. As Bonnie Blackwell has noted, the obstetric phantom in the lecture theatre encouraged students to employ force to achieve a quick delivery (Blackwell 2000, 92–93). Not only was resistance part of what these phantoms simulated, but the environment in which they were used, in group teaching settings where each student had limited time to engage and a pressure to perform in front of teachers and peers, encouraged a perception of the laboring body as a machine to be set working as quickly as possible. Miriam Formanek-Brunell makes a similar argument about the gendered division of

materials and production techniques in doll design in this period, noting that dolls designed by men made use of hard manufactured materials and mechanical elements, and tended to prescribe play: "Girls who played with dolls as they 'should' were now forced to keep up with the dolls' inexorable machine pace. To do so required order, discipline, and little imagination. The doll was a machine that performed one specialized function and did so over and over again—at least until it broke" (Formanek-Brunell 1993, 59–60).



Figure 4
Dennison Co.; Littauer & Bauer, *Paper Doll*, 1880, colour-lithographed paper with metal grommets. Courtesy of The Strong National Museum of Play, Rochester, New York.

The realms of feminine-coded production, and of woman-dominated midwifery, created quite another culture. Women were also producers and inventors, of course, but they worked most often in private settings and with other kinds of materials: textiles, fibers, and papers. According to Talia Schaffer, such feminine handicrafts were understood in explicit opposition to the masculine world of commerce and the mechanically produced object, even while they formed part of both arenas (Schaffer 2011, 9–13; Dunlap Bercaw 1991). In doll production in America in this period, for instance, while men were making mass-produced and mechanical dolls, some women reformers were making cloth dolls in domestic workshops. These dolls were softer and more materially appealing, but also more hard-wearing (Formanek-Brunell 1993, 61–89). And they were intended to facilitate more open-ended and imaginative play. In obstetric simulation, similar gender dynamics can be found. While I have not found any evidence of women identified as inventors or producers of the full-sized obstetric phantoms of the late nineteenth century, there are examples from before and after this period. Madame du Coudray's cloth simulators of the mid-eighteenth century were softer and smaller than the mechanical late nineteenth-century versions, and made no use of human remains. Du Coudray's phantoms not only made use of her feminine-coded crafting skills, but made an argument for the feminine nature of midwifery itself (Stephens 2021). In the twentieth century, as Anna Harris and John Nott have shown, the knitted uterus, an object heavily associated both with feminine production and the 'women's health' movement, was considered by instructors at Maastricht

University to be a 'more dynamic and simple' tool for simulation (Nott and Harris 2020, 49).

It is undeniable that midwifery and obstetrics, and women's and men's practice, created very different cultures of childbirth. Characterizations of masculine medical obstetrics as technical, detached, and inclined to intervention, and feminine midwifery as social, emotionally engaged, and less interventionist are certainly useful. But they are also heavy generalizations: neither gender nor childbirth practices can actually be split into a binary, and Shibata's phantoms are an interesting case in point. In some ways, they are quite obviously invested in the mechanical and the medicalized view of childbirth. They were also made by a man, and so demonstrate that paper crafting and paper culture was far from *only* a feminine concern. But their materiality does seem both to reference the feminine realms of crafting and of dolls, and to script a very different kind of interaction to the full-sized phantoms. Made of paper, they cannot encourage speed and force. They required, instead, delicate handling and contemplative engagement—they encouraged the student and not the teacher to set the malpresentation. And, as 'pocket' models for use in private and in one-to-one teaching settings, they did not involve the problem of limited time and group performance. Outside of these very prescriptive settings, too, they could be played with in much more diverse and creative ways, as I shall explore further. Like the late-nineteenth-century American woman-made and 'reform' dolls described above, Shibata's phantoms facilitated play of many kinds, and materially encouraged gentle and

explorative handling (Formanek-Brunell 1993, 62; Ganaway 2018, 135). They evoke, too, the centuries-old rhetoric around the physical skills of the midwife. Since at least the early modern period midwifery had been associated with a particular dexterity and sensitivity of the hand (Whiteley 2023, 137–78), and this is expressed in Shibata’s paper dolls, their need for relatively delicate handling and minute adjustments. Simply, I argue, the use of articulated printed paper dolls as a pedagogic tool was not just practical (paper being cheap and portable) but also ideological, associating midwifery practice with women’s spheres of expertise in material production, in dexterity and sensitivity, and with their more nurturing and holistic, less mechanistic and operation-based approach to childbirth.

An obstetric model that was also a paper doll reconciled two very different worlds: it helped women to understand the medical in material and cultural terms with which they were familiar. It also feminized medical practice and provided an acceptable narrative for thinking about female medical skill—not the same as the doctor’s technical and forceps-focused skill but feminized, ‘craftified’, domesticated. Despite the longstanding presence of women and traditionally ‘feminine’ skills in medicine, and the increasing presence of qualified and registered women practitioners in the late nineteenth century, medical women remained difficult and anxiety-producing figures. Feminizing medical practices and objects helped people in the period to reconcile the disconnect between what medicine involved, and the roles and capacities felt to be suitable for (bourgeois) women (e.g. Brock 2017, 13). For example, at the Woman’s Medical College (WMC) in

Philadelphia, where the first English edition of Shibata’s *Phantome* was produced by Ada Howard-Audenried, the female medical students employed various feminine crafts to neutralize their medical practice. In 1876, WMC students provided objects for the Centennial Exhibition in Fairmount Park, engaging in the kind of work regularly undertaken by middle-class women, but instead of more conventional handicrafts, the medical students showed off their prowess in pharmacy (Peitzman 2000, 42). As Steven J. Peitzman notes, this was hardly the most cutting-edge or useful skill gained by the medical students, but it did have the advantage of producing beautiful objects, and so worked to reassure an anxious public that women could become doctors without losing their gender identity, becoming unsexed, mannish, or degraded. It also worked to feminize medicine, to indicate that skills traditionally associated with women did in fact form a crucial part of medical practice. Moreover, as Jessica Dandona has shown, students used the creation of photographs and albums to shape their personal and group identities as women practitioners (Dandona 2022). Here, again, the feminine-coded skills of album-making, often employed to construct the identity of family and social groups, was combined with the cultures of masculine fraternity in medical education.

Indeed, looking at this wider world of ‘feminized’ crafts supports my material and cultural analysis of Shibata’s phantoms as dolls as well as medical simulators. Often left out of histories of medicine, fêtes and fairs were regularly used to spread medical knowledge, to raise political awareness or solicit charitable donations. In these spaces, dolls of all



kinds rubbed shoulders with medical models, instruments, and tools. The ‘Barselhjemsutstillingen’ or Maternity Home Exhibition that toured Norwegian cities in 1916–17, for example, sought to improve conditions for women giving birth and raising young children. It combined anatomical models and medical equipment, medical and domestic dioramas, and less obviously medical objects like children’s clothing and dolls (Loring 2023). Some of the dolls were used to model types of children’s clothing, swaddling and diapering techniques, or in dioramas of clinics and homes, but others were simply toys, ranging from simple rag dolls to expensive porcelain fashion dolls (figure 5).¹ Cases such as this show that the realm of masculine medicine overlapped extensively with the feminine and the domestic, with the political, and with

Figure 5
Anon., Barselhjemutstillingen 1916. Utstyr til helsestasjon [Maternity Home Exhibition 1916. Equipment for a health centre], 1916, photograph. Norsk Teknisk Museum.

the woman-influenced movements for social reform and hygienic education. The material cultures of all these realms were in constant conversation. Our current inclination to separate objects into disciplines: the obstetric phantom in one box and the paper doll in another, does not accurately reflect the way such objects actually circulated and interacted in the late nineteenth century.

Cases such as these puncture the myth of the ‘separate spheres’. Medicine as a masculine profession and the female realm of the domestic were not so separate as medical rhetoric argued. Wives, sisters,

and daughters got involved in the work of their male relatives in all kinds of ways, from management to fundraising to assisting in medical practice. Increasing numbers of women *were* medical practitioners, from doctors and surgeons to midwives, matrons, and nurses (Brock 2017; Wells 2001; Blake 1990). Indeed, nursing is another overlooked sphere in which the feminine was centrally important to the practice of modern medicine (see, for example, Bashford 1998). Objects like Shibata's phantom were used to reconcile the seeming contradictions in this involvement. Medical rhetoric at the time and historic bias since has often rendered these 'feminine' influences on medicine invisible, but they must surely have formed an unignorable part of medicine to both practitioners and patients at the time.

Medical Play

This ideological shaping of midwifery as a particularly feminized branch of largely masculine medicine is borne out if we look more closely at the representation of the fetus in Shibata's *Phantome*. Compared to the fetal dolls of leather and bone or the preserved fetal cadavers used in the full-sized phantoms, Shibata's phantoms present a much more appealing, humanized, 'babified' fetus—one the user could conceivably mother as well as deliver. Not only are the fetuses appealingly sized to fit in the hand, but they are also subtly pink and represent less the fetus *in utero* and more the newborn infant: they have hair, serene expressions, well-fleshed limbs, and not a hint of an umbilicus. They are cute. In my book *Birth Figures*, I have described the long history of appealing representations of fetuses as babies in midwifery illustrations, where the image

makes an argument for medicine's capacity to produce beautiful and healthy infants, and indeed could act as an object of power towards these ends (Whiteley 2023). Shibata's phantoms fit this pattern, and in the material world of other kinds of obstetric simulation, they also make an association between feminine midwifery practice and the fetus as baby, whereas in more masculinized objects the fetus remains a fetus. Thus, the phantoms script not only medical play, but maternal and caring play much more broadly, by pointing both to living babies and to child and infant dolls.

I have handled Shibata's phantoms in several libraries, and I have made facsimiles using printed card, a hole punch, and split pins. In the library, I handled the objects with gentle care, examining them, attempting to pass them through the pelvis as the text instructs, and returning them to their pockets in the same position I found them. When I made my facsimiles, I was less gentle, more playful. I made them wave and dance on my desk, I joked with friends about using them as part of Christmas decorations, and when I was clearing up, instead of putting them away with my other facsimiles I set them up on a bookshelf so I could see them. I felt an immediate affection towards them, treated them more like dolls than like medical models. Other facsimiles I have made of obstetric paper models have not inspired the same reactions in me. Indeed, when divorced from the pelvis, as they easily are, there is very little to indicate that they *are* medical objects. Fetal skull measurements are printed on the heads, and the title of the pamphlet on the torso, but these are easy to ignore if what the user wants to see is a baby doll.

The great influence that codes of environment and expected behavior had over my interaction with these objects is indicative of the potentially wide uses they had for contemporary audiences. In the lecture theatre and the clinic, we may assume they were largely used as obstetric models for training, demonstration, or experiment. But these were pocket guides intended to be accessible to students directly: how did midwives use them among themselves, at home, or in the company of their patients? In these scenarios, where the obstetric phantom and masculine medical authority recedes, perhaps doll-play and paper crafting contexts restructured their use. My own material and affective engagement with these objects leads me to conclude that they invite not just structured learning, but play. Of course, play is a difficult concept to define, but we may use Brian Sutton-Smith's inclusive definition of "a very exciting kind of activity that players carry on because they like doing so" (Sutton-Smith 1997, 17). This is a helpful concept to establish here because it reifies a sensation I had when handling the objects, that they facilitated creative, open-ended and fun uses, they were not limited to a set of technical and closely-defined learning-oriented functions.

We have no written proof that women played with the phantoms as if they were paper dolls, but using Bernstein's concept of the 'scriptive thing', we can confidently assume that such uses were undertaken. Visually, as I have pointed out, the phantoms look more like babies or young children than like fetuses. Popular printed toys, albums and games would likely have offered a script for interacting with them. Late in the nineteenth century, paper dolls were only one form of a prolific

and diverse paper culture that encouraged both adults and children of a very wide variety of incomes to play with paper. Play styles ranged from world-creation, to narrative and domestic play, to identity and community creation, to subversive and even destructive play (Field 2019; Flanagan 2009, 28; Parsons 2020; Townsend 2018). As Bernstein points out, reading the visual scripting of Shibata's phantoms, in the context of late nineteenth-century paper culture, is arguably *stronger* evidence than written accounts of the objects' use (Bernstein 2011, 80). Textual sources, found in medical books and journals, tell us that these are tools of education, but the writers had a vested interest in controlling and limiting the narrative around these objects, indeed in using them to *create* rather than *describe* a particular kind of function. The scripting of the object itself, which encourages paper play, could certainly be rejected or subverted, but it would still have been *seen* by any 'competent' contemporary user (Bernstein 2011, 78–79).

So, what kind of play, exactly, would the phantoms have scripted? Dolls in the nineteenth century (and since) had both very specific intended play functions (mothering, dressing, social rituals, domestic work), and widely practiced subversions (death, injury, punishment, domestic conflict, identity change) (Formanek-Brunell 1993, 7–34; Marcus 2007, 111–66; Flanagan 2009, 27–33). Indeed, in the context of dollhouses, Frances Armstrong suggests that the presence of prescription itself encourages subversive play—the same might well be said for the medical model once the user is not under medical supervision (Armstrong 1996, 36). And how would these contexts have shaped the play of midwives and their

patients? Of course, they may have been very useful explainers of the process of birth for patients in the home as well as for student midwives in the lecture theatre. Midwives and patients may equally, or indeed simultaneously, have mothered and cared for these paper dolls, and indeed this kind of play is hard even to categorize as subversive. If it isn't the stated use in Shibata's text, it was considered a part of the midwife's duty and something she could hopefully regulate and improve in her patients. Mitchell and Reid-Walsh argue that feminist scholars have, in fact, spent too much time looking for 'subversive' doll-play and that "perhaps the act of handling the commodified emblems of conventional, Western femininity in a leisure activity has provided, and continued to provide, girls with a way to literally and conceptually manipulate the concept of commodified homogenous womanhood" (Mitchell and Reid-Walsh 2002, 202). The phantoms allowed midwives and their patients to handle and manipulate their expected roles as caregivers, healers, mothers. As such, in domestic spaces and between women, interactions with the phantoms might have included examination and admiration, use of the phantoms as models for hoping for and imagining a healthy baby, or more active mothering play including feeding, swaddling, kissing, and embracing. In the home, where most births still took place, the medical aspects of midwifery could not be separated from the domestic concerns of the patient and their family. The separation between the paper doll and the obstetric phantom would have been difficult to maintain.

Play with the phantoms might have been simply playful, but it might also have been more explicitly demonstrative. As I

have already mentioned, midwives in this period were also increasingly becoming social regulators, expected to teach their patients skills in mothering and hygiene. The little pocket phantoms could easily become models not of the processes of birth, but the best techniques in washing, feeding, and dressing. Indeed, as Formanek-Brunell has shown, dolls in America in this period were explicitly presented as objects that "taught both middle- and working-class children the importance of health and hygiene in the home" (Formanek-Brunell 1993, 5). The dollmaker Martha Chase even produced a range of dolls specifically to teach medical subjects. A full-sized female doll was produced for training nurses, and a series of infant dolls of different ages were used as part of social reformist education drives. In these classes, the dolls were used to enact, literally to play, the approved methods of mothering and domestic maintenance (Formanek-Brunell 1993, 85–86). So why not Shibata's phantoms? In the pocket of the midwife, they might well become demonstrators for all kinds of care practices and medical treatments.

This interpretation of the phantoms also demonstrates how women empowered themselves and valued their own knowledge and skills within a deeply patriarchal system of medicine. Unlike in the medical schools, where care and sociability were ever more strictly separated from medical practice, the paper dolls in the home embodied a different kind of expertise. For some this may have been a consciously 'proto-feminist' act: to educate and empower women as experts in childbirth and childrearing. For many more, it was a less consciously political turning away from the realm of masculine medicine,

and an acknowledgement of the importance of one's own authority, within the home, and among communities of women. In these spaces, just as the domestic could not be separated from work, play could not be separated from care.

Play and learning are of course deeply entangled processes, but not always with such explicit outcomes as described above (Sutton-Smith 1997, 18–34). For some midwives, the disconnect between the abstracted and dehumanized patient in the clinic, and the actual women and infants they attended, often in their own homes, may have been very great. The phantoms might have worked to reconcile these two identities through play—by endowing the phantom with life, the medical fetus and the social baby could be drawn together. Another disconnect in the identity of the newborn was between the ideal healthy child of the obstetrical textbook and the many sick and failing infants that midwives inevitably encountered in their practice. There is much evidence that, in the late nineteenth century, not only did children use dolls to play out scenes of sickness and death, but such play was a recognized phenomenon, and one catered-to by commercial toy companies (Formanek-Brunell 1993, 20 and 32; Armstrong 1996). In the context of a culture familiar with doll sickbeds, miraculous recoveries of dolls, and doll funerals, Shibata's phantoms may have lent themselves to the processing of infant morbidity and mortality through play. Such play, which can be done casually, almost unconsciously with these little hand-sized paper dolls, may have allowed midwives to process difficult aspects of their jobs.

As the case of Martha Chase's dolls show, learning delivery techniques, practicing infant care, processing the difficulties of a medical career, and negotiating social identity all count as more or less 'sanctioned' kinds of play with the paper phantom. Other kinds of play may have been more expressively subversive. While such aspects of medical culture have left little evidence, and have been little studied, we do know that dark and morbid humor was a widespread cultural reaction to the difficulties of medical study and practice (Sappol 2002, 74–97; Peitzman 2000, 90). Many medical students, for instance, personified and developed comical and affectionate relationships with the skeletons in their classrooms and the cadavers they dissected. Midwives may have done the same with their paper phantoms. It is so easy to make them dance, wave, and perform contortions, and this kind of play may have felt needful to young women working in demanding studentships, or midwives balancing caseloads with financial, emotional, and academic pressures. To make the phantom caper might have been a release from the sadness of losing a patient, a step back from the pressure of a challenging exam, or an act of defiance in the face of an oppressive or misogynistic supervisor or teacher. To make the medical model a tool for the subversion of the medical system and its hierarchies may have offered a profound relief for those at the bottom of the pyramid: students, midwives, patients.

But what of the male medical students? In many of the editions of the *Phantome*, it is they and not midwives who are identified as the primary audience. Did they engage in any of this wider doll culture? Certainly, they must have been aware of

it, just as they were aware that obstetrics was still seen as a ‘low’ and almost shameful discipline within medicine largely *because* of its association with women. But, on the other hand, boys and men were not wholly estranged from dolls. Formanek-Brunell shows that American boys in the nineteenth century often played with dolls, though she notes that, “While girls pretended to be little mothers to their dolls, boys often assumed authoritative public roles such as doctor, preacher, and undertaker to sick, dying, and dead dolls” (Formanek-Brunell 1993, 30). Doll-play was feminized, but not to the exclusion of male engagement. Indeed, perhaps it was seen as somehow suitable that these male students employ a doll-model in this feminized realm of medicine. They could turn it to their own ends in enacting more heroic, medicalized, and tool-oriented births, or by using it as a symbol of their authority over midwives and patients (see Blackwell 2000; Wilson 1995; Yeniyurt 2014). Other aspects of humorous and affectionate play with these mobile infants may have been just as appealing, rewarding, and cathartic to men as women. By centering supposedly feminine contexts (handicrafts, dolls, and doll-play) we gain an insight into the experience of women in the realm of medicine. But we also enrich our understanding of men’s experience of medicine: the feminine aspects of its practice that surely existed, yet rarely reach medical histories.

Ningyō

Germany, the USA, and Canada each had their own individual cultures of medicine, print, and play, but the increasingly global and hegemonic power of ‘Western’ medicine, and the globalized trade in

recreational prints and toys, meant that these cultures were also linked and increasingly mutually influential. The most popular obstetric phantoms, including Shibata’s, predicated their success on their export to and use in many countries, both in Europe and America, and increasingly in the countries these Imperialist nations colonized (Maerker 2019, 186–89; Nott and Harris 2020).

Japan, the other place where the phantoms were published and where Shibata built his career, deserves a more individualized look. While this section does not constitute a full study of Shibata’s phantoms in Japan, I consider it essential to recognize and to sketch (as far as research constraints allow) a Japanese history of the object *alongside* that of Germany and North America. As Martin W. Lewis and Kären E. Wigen have pointed out, some definitions of that amorphous concept of the ‘West’ include Japan on the grounds of economic power and shared culture (Lewis and Wigen 2014, 56–57). Indeed, by the late nineteenth century, Japan was well into its project of ‘modernizing’ the country by adopting aspects of European and North American culture, including both medical training and popular print (Zohar 2020; Zohar and Miller 2022). The medicalization and professionalization of midwifery in Japan happened very quickly in the late nineteenth and early twentieth centuries, in some ways enacting at warp speed the process undergone in Europe (Kim 2014). Traditional midwives and their practices were denigrated by doctors, and new young midwives were recruited, trained in schools in major cities, and sent back to their homes not only to improve practice, but to provide a bridge between medical and state authorities and their communities

(Terazawa 2018; Homei 2005). As such, the medical pedagogic role of Shibata's phantoms in Japan likely bore a strong resemblance to their role in the other places they were published. They were used in the midwifery and medical schools to explain and to model fetal presentation. They linked the patient body and the textbook illustration, and they worked as a cheaper and more accessible version of the full-sized phantoms owned by midwifery schools and lecturers (Shibata 1893, 7).

But as this article has demonstrated, Shibata's phantoms were objects that invited other kinds of uses and easily made their way into other social and professional contexts. As in Europe and North America, while there is little direct evidence of midwives owning these phantoms, it is one of the purposes stated in the Japanese preface (Shibata 1893, 8). Yuki Terazawa also cites evidence in her book *Knowledge, Power and Women's Reproductive Health in Japan, 1690-1945* of midwives training almost exclusively on 'paper models' (Terazawa 2018, 141). Indeed, the affordable paper models would have provided midwives with a useful tool not just for study, but for engagement with their patients. Even more so than in Europe and North America, because the cultural change was being propelled much faster, many people objected to the new and medicalized practices of the *shin-sanba* or new midwives, and persuasion and explanation made up much of their workload (Nishikawa 2003, 91–98; Homei 2005, 74–76; Terazawa 2018, 141–54).

Because the phantoms in Japan would have had an association with foreign medicine and perceptions of and

practices on the body that were still both strange and much at odds with more established medical systems, it is even more likely that the phantoms were used and interpreted in many different ways by varied users. Added to this, Japan had a longstanding and important culture of *ningyō*, most often translated as 'doll'. In Japanese culture, however, *ningyō* had much greater reach and prestige than Western dolls. They could be works of art, they could be objects of political power, or ones of religious or emotional importance. They could be life-sized or miniature, made of many and various materials from wood to cloth to paper, and they could be fully three-dimensional or flat paper models. Alongside their many other uses, *ningyō* in Japan could be children's toys, fashion models, and medical teaching aids (Pate 2005; Hodge 2013). Shibata does not use the term '*ningyō*' in the Japanese editions, just as 'doll' is not used in the English ones, but this does not mean that there was no cultural overlap with *ningyō*, or even that Shibata would have objected to such a connection. The rhetoric of medicine presented a culture much more technical, unified, and homogenous than that encountered in actual practice. In reality, many aspects of *ningyō* culture would have been readily available to script the uses and interpretations of Shibata's phantoms.

Dō-ningyō or 'bronze dolls' were originally produced to teach acupuncture according to the tenets of Chinese medicine. These often-life-sized dolls were originally made in bronze, though later were produced in other materials. Well before the Meiji era (1868–1912), though with increasing rapidity after the forced opening of the borders in 1853, Western medicine became more thoroughly incorporated

into Japanese practice. So, the term *dō-ningyō* came to be used also for Western and Western-style anatomical models (Pate 2005, 273–74; Hodge 2013, 88–92). Combining these Western anatomical models with an increasing interest in extremely life-like dolls called *iki-ningyō*, dolls representing the stages of pregnancy and the processes of birth were produced in the nineteenth century. Different sets of models simulated: gestational development, different positions of the fetal head during birth, and the physiology of birth using a flexible fetal doll and full maternal body (“Mechanism Arts in the Edo Era” 2001). These models were surely influenced by European obstetric phantoms and anatomical waxes, but also adopted Japanese craft techniques and interests. They also had a complex cultural life in Japan—not simply tools of medical education but also popular entertainments. Anatomical and obstetric models were an established aspect of the great street fairs that grew up in Edo called *misemono* (Pate 2005, 268; Hodge 2013, 98–99; Markus 1985, 521). The double life as professional tool and public spectacle has resonances with the popular anatomical museums and shows that spread around Europe in the nineteenth century, though there they had been mainly suppressed by the 1890s, and anatomical museums more firmly established as private spaces for professionals (Alberti 2011; Bates 2008). In Japan, however, the interest of lay people in Western anatomy was catered to by models that were intended to produce wonder and to entertain, as well as to inform. It is easy to imagine, then, that Shibata’s phantoms might have served a similar purpose, where a doctor or midwife wanted to educate or entertain a patient. Indeed, the knowledge of fetal presentation and the mechanics of

birth was the same as these older pregnant *ningyō* were already providing.

This was not the only context that likely informed interpretations of Shibata’s phantoms. Popular print, and especially woodblock, was of great importance in the nineteenth century in Japan. Again, the medium incorporated some aspects of modern Western print culture alongside longer-standing visual and technological traditions. Meiji popular prints included Western style paper dolls with both traditional and Western fashions that could be overlayed using tabs (Salter 2006, 135). Other prints took foreign bodies as their subject, depicting the features, dress, and actions of the foreigners who were present in Japan in increasing numbers (Fabricand-Person 2012). More broadly, paper dolls formed part of toy prints in many ways—from ‘big sister’ fashion dolls to elaborate paper theatres (Salter 2006, 130–201). All this is to say that Japanese users would have been primed, much like their Western counterparts, to *play* with Shibata’s phantoms (Salter 2006, 163). In Japan, too, they may have had an added interest in being interpreted as ‘foreign’ bodies, as Sonia Favi and I have discussed in our chapter ‘Phantoms of Race’ (Favi and Whiteley forthcoming). The features of the fetuses are not overtly racialized and while they might have been strongly identified as objects of a foreign Western epistemology by some, others may have seen and understood a Japanese infant, particularly within the growing rhetoric that identified the Japanese race as superior, essentially more ‘white’, than neighboring and colonized Asian races (Kowner 2016). Midwives, medical students, and lay people may simply have used the phantoms as toys unrelated to their pedagogical aims,

or as objects of release from the anxieties of medical study or the contradictions of clashing medical cultures. They may also have used the phantoms when engaging with patients, employing longstanding cultures that associated both prints and *ningyō* with the promotion of health. The Meiji period had also seen a much wider and more radical shift of attitude in terms of women and girls' education and their role within the home. According to Koyama Shizuko, Edo period thought placed little emphasis on the skills of motherhood, but the Meiji concept of *ryōsai kenbo* or 'good wife, wise mother', argued that women needed to be educated so they could be active mothers (Koyama 2013, 11–52). This shift in attitude was deeply entwined with the perceived need to improve both the 'quality' and number of Japanese citizens. In this context, just as in Europe and North America, the adaptability of Shibata's phantoms may have made them useful didactic tools not just for midwifery but for mothercraft.

Both prints and dolls were used as medical charms or talismans in Japan. In general, *ningyō* "functioned in both perceptual and practical ways to preserve and promote an individual's health. Perceptually, *ningyō* were culturally empowered with the capacity to divert disease and evil influences, absorbing the malevolent, and thereby purifying the individual" (Pate 2005, 268). Particular prints were employed to ward off measles and smallpox. Some dolls were produced as something between art object and talisman specifically for pregnant women and infants. Crawling baby dolls were produced to celebrate the birth of a baby, and acted as talismans that drew evil influences away from the infant (Pate 2005, 24). Other

kinds of baby dolls were kept specifically in the birthing room to protect the birthing woman and child (Pate 2005, 177). In this context, the identification of Shibata's phantoms with a talismanic power seems entirely possible. Childbirth cultures in Japan changed sporadically in the late nineteenth and early twentieth century and while some Westernized physicians may have scorned such practices, that would have done little to diminish their power. The 'new' midwives had a particularly tough time in combating traditional childbirth practices, and for them the phantoms may have been conveniently flexible—protective talisman one minute, medical explainer the next.

We cannot know which, if any, of these cultural contexts were employed when users encountered Shibata's phantoms. But a study of prints and dolls in Japan more broadly does suggest that Japanese users, professional and lay, would have approached the phantoms with the ability to interpret variously, and to incorporate new Western medical epistemologies with existing knowledge systems that were still highly valued. As the phantoms spread, were purchased, used, and copied, it is simply unlikely that they remained exclusively in the medical pedagogic realm as explainers of fetal presentation. Indeed, it is important to look beyond the narrative of Western medicine as imposed wholesale upon Japan. Rather, Japanese people consciously incorporated Western knowledge and objects to the degree they felt was most effective and appropriate. Moreover, not all users would have approached the phantoms from a purely Japanese or Western cultural background: by the late nineteenth century, increasing

numbers of Japanese were emigrating to America and other parts of the West, and white Europeans and Americans had an increasing presence in Japan. The combinations of midwifery cultures described by Susan Smith in her study of Japanese American midwives, for example, demonstrates just how fallacious it would be to propose particular 'Japanese' or 'Western' interpretations of Shibata's phantoms (Smith 2005). What a consciousness of wider cultural contexts shows is that Japanese audiences were primed to invest the phantoms with power, agency, and humanity, and to use them as tools in their ongoing negotiation of Japanese modernity.

Conclusion

Play is a difficult word—it is hard to define, to characterize, or to limit. In Western culture today we see play as both an inherent capacity of the human species, and also a highly specific cultural phenomenon (Sutton-Smith 1997). The word is, some might say, too diffuse to be useful. And perhaps my employment of it to describe the use of medical phantoms for learning is a case in point. But it can also be argued another way: by using 'play' to think about medical history we open new avenues both for the kinds of histories we can tell, and how we tell them. I argue that play is useful both as a concept for thinking about medical learning in the past, and for how methodologically we undertake the writing of such histories. Play can be an antidote to the earnestness of medical histories; yes, medical training in the nineteenth century, as today, was a serious business, it involved hard work and commitment, and encouraged a detached professionalism. But we *know* that humor, play, and

the breaking of social codes was also a crucial part of the experience of medical training in this period (see, for example, Kerley 2014). We also know that tracing these histories is harder—there are fewer records, and indeed there are many records that deny or forbid the presence of play, humor, and the personal in the realm of medicine. So, too often, we end up excessively cautious about discussing these parts of medical culture. We need to take a leaf out of the 'play' book.

Attention to the material possibilities of Shibata's phantoms, combined with a consciousness of their cultural contexts, can give us a much richer and more inclusive history of their use. This involves a kind of play on the part of the historian, an imaginative wondering about how, why, and what is possible. We are very unlikely to uncover multiple first-hand sources describing midwives' use of their paper phantoms, yet thinking about these histories is still important. There is a place for speculative play in writing histories that include the unspoken-for. Thinking about Shibata's phantoms as paper dolls and objects of play, we can see the playful in medical culture, we can understand the richness of the midwife's working life, and the complexity of the epistemologies of childbirth in the birthing room, where new and old social and medical traditions met. And, indeed, we can allow ourselves to play with objects that so obviously and kindly invite us to do so.

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¹ Many of the objects from the exhibition are now held in the Norsk Teknisk Museum and

have been digitised: <https://digitaltmuseum.org/search/>.