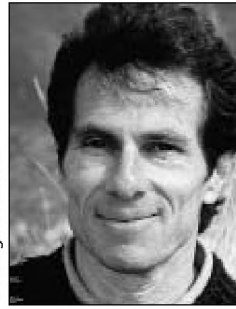


Misperceptions about White Gloves



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Introduction

Awkward mobility. Loss of feeling. Impaired sensations. These are not descriptions of a trip to the dentist, but rather a visit to the reading rooms of many special collections where the experience of handling valuable rare books and documents is synonymous with donning white cotton gloves. This paper examines the effect of this well-meaning effort to protect our irreplaceable holdings from soiling in light of the potential for damage introduced by handicapping the handler. Routine hand washing is recommended as a more effective means of preventing the spread of dirt while improving the user's haptic response to and tactile appreciation of the collections.

This article limits its focus to historical books and paper-based collections. The authors acknowledge that other media types, including photographic prints, negatives, and slides, as well as three-dimensional objects (especially those manufactured from tarnishing metals), have specific handling issues most appropriately addressed by specialists within those individual fields.

The Myth of Protection

"Books must not be handled with dirty fingers, and what is as bad for fine books, must not be handled with gloves. Readers must be required to remove their gloves in turning over the leaves of handsome, illustrated volumes, though they are frequently reluctant to do so." (Kroeger 1903, 320)¹

How, you may wonder, did the wearing of gloves become a mandatory requirement in some collections for reading rare archival and library material?

This policy, intended to 'preserve' historically and artistically significant collections, arguably does more harm than good. Institutional insistence that patrons and special collections staff don white cotton gloves when handling rare books and documents to prevent dirt and skin oils from damaging paper-based collections is inherently flawed; gloves are as easily soiled as bare hands. Cotton gloves are extremely absorbent, both from within and without; for example, even a scrupulously clean reading room provides numerous opportunities for gloves to pick up and transfer dirt to surfaces such as a text page. Table and chair surfaces may have residues of cleaning and polishing solutions; foam book cradles and their fabric covers become increasingly imbedded with dust and particles, such as red-rot shed from leather bindings; and makeup, skin creams, and skin oil (sebum) can offset to a glove's exterior with the scratch of a nose. Cotton gloves may not even help keep the reader's hands clean. In addition to accumulating dirt on the outer surface of the glove, warmth resulting from insulating the hand stimulates eccrine sweat gland production (Hurley 2001), causing hand dampness that is subsequently wicked through the porous fabric, increasing the likelihood the glove will attract, absorb, and distribute surface grime to the paper being handled. Further, the glove's raw fiber, cotton, as Jens Glastrup determined through extractions, contains fats and alkanes (Glastrup 1997), making it less than ideal as a prophylactic.

Sweat itself is a slightly acidic liquid composed almost exclusively of water (99.0-99.5%). The remaining solutes are nearly evenly divided between inorganic salts

¹ In this context, 'their gloves' refers to fashionable hand apparel readers were wearing when they entered the building.

and organic substances (Hurley 2001, 71-72). Sebaceous glands, responsible for secreting sebum (skin oil), do not exist on the palms of the hands (Botek and Lookingbill 2001, 87-94) so the direct transfer of sebum through normal collection handling is not a significant issue.

Given the widespread belief that routine handling of paper with bare hands chemically damages it, it is telling that our research uncovered no scientific evidence supporting this notion. The closest citation on the subject found was an article entitled, "Fingerprints on Photographs" in which Klaus Hendriks and Rütiger Krall (1993) state that a fingerprint could damage a silver image if the salts in sweat, particularly sodium chloride, managed to penetrate through the gelatin layer. Since the surface of paper is almost always protected by a layer of gelatin (or some other sizing agent), sodium chloride would have to permeate this barrier before it could interact with the cellulose beneath, and the corrosion potential of cellulose is not remotely as great as that of silver. As discovered by Hendriks and Krall, the other necessary component for the silver corrosion reaction is oxygen, and it can be argued that bound sheets of paper in closed books are not exposed to high levels of environmental oxygen for long periods of time, and neither are unbound sheets stored along with other pieces of paper in archival storage folders and boxes.

Douglas Nishimura of the Image Permanence Institute at Rochester Institute for Technology described taking part in a steel industry corrosion test, an experiment included in Hendriks & Krall's 1993 research paper. In this study, twenty people wore PVC gloves for five to ten minutes to make their hands sweat. The gloves were removed and each subject, bare-handed, touched a piece of steel. Nishimura reports that "several could rust a [steel] plate after the 'glove sweat' test" (1997). The participants then washed their hands with a non-ionic surfactant followed by extensive water rinses, and only one, characterized as a 'ruster' transferred enough perspiration to corrode the metal (Nishimura 1997). This research illustrates that after thoroughly washing and rinsing their hands, most people will not transfer enough sweat to damage paper under normal conditions. For the five percent who perspired heavily, the only effective barrier against what Marion Sulzberger terms the 'skin's sprinkler system' (Hurley 2001, 47) is a non-porous glove made from vinyl or latex.

The issue of glove use is more complex, however. Current reading room rules do little to instruct patrons about preferable handling practices, relying on the impression that wearing gloves adequately achieves collections care. Even if cotton gloves were capable of providing an effective prophylactic barrier between patrons and the collection, their use promotes the false illusion that the hands, once encased, are somehow transformed into 'safe' instruments. Wearing gloves actually increases the potential for physically damaging fragile material through mishandling, and this is especially true for ultra thin or brittle papers that become far more difficult to handle with the sense of touch dulled. Measures must be taken to reduce collection risks through instruction and example, we submit, but not through the use of gloves.

The Sanitary Illusion

"The children should be required to make a show of clean hands before being allowed to handle the books, and in order to facilitate this a lavatory is quite necessary adjunct to the room."

(Dousman 1896, 408)

In attempting to achieve cleanliness in the reading room by donning badly fitting cotton gloves, both curators and patrons forget that rare books and documents never arrive in special collections untouched by human hands. Quite the contrary. Prior to machines superceding most hand-processes in bookmaking, innumerable occasions arose for 'the unwashed multitudes' to come into direct contact with the books and paper artifacts now so reverently sequestered. Paper sorters and graders (typically, low-paid women) were among the first people to handle freshly finished sheets of pristine paper made from recycled rags. After curing in the mill, these sheets were counted into quires or reams, wrapped by a warehouse worker, and sent off to the printer or stationer.

At the printing office, the paper was traditionally dampened by a printer's devil (usually a teenaged boy) before being picked up, sheet by sheet, for printing and then returned to a pile to await the verso impression. Once printing was completed, the sheets were hung up to dry. Inspection, collation, and folding in preparation for hand sewing or distribution required substantial amounts of human contact. The bookseller's clientele, including the book's eventual

owner, may have perused the text sheet by sheet numerous times. Later, the owner's family and friends may have repeatedly riffled through the pages, enjoying the visual and tactile pleasures of reading the volume in a laissez-faire atmosphere of entertainment or necessity.

As for manuscript documents, a private letter writer would casually hold down or lean on a fresh sheet of paper when writing to a loved one, while legal and business clerks drafted correspondence, kept records, and tallied accounts in ledgers in less-than-sanitary settings (the term 'sanitation' did not first appear in print until 1848). The recipients of these letters and documents read them, sometimes by candlelight or the glow of an open, often smoky, fire and then folded or perhaps neatly bundled them with a ribbon for storage in wooden cubbyholes, desk drawers, or a hope chest.

Yet, while these practices occurred extensively in all parts of the world over many hundreds of years, little evidence exists that repeated contact with human skin appreciably deteriorated historic paper. Granted, perusal through some centuries-old manuscript books and documents (especially parchment-borne ones) can yield examples of dirty, obviously often-handled margins. But given the eras from which they come – with wood or coal fires, sooty rooms, greasy surfaces, and candle-light illumination, all interwoven with less-than-ideal hygienic practices – can one expect less? Still, there are far more examples of nearly pristine books, letters, and documents, hundreds of years old, that exhibit little physical evidence of human touch, even though we can rest assured they have been generously handled over time. Compared with the destructive effects of air pollution, heat, light, poor storage conditions, repeated folding, and internal acidity, the chemical deterioration caused by paper's contact with bare skin is imperceptible. In fact, when was the last time you actually saw a fingerprint on a piece of paper?

Prior to being sequestered within environmentally-controlled storage conditions, paper, protected in large part by its buffering surface sizing, has effectively survived the impact of bare-handed reading unscathed. And, the number of times most paper will be touched in the future within special collections is infinitesimal compared with the amount of handling it received prior to becoming part of our 'cultural heritage'.

The Unfeeling Hand

"Don't handle books with dirty fingers. Wash your hands." (L. Lyon 1900, 350).

Humans all share five senses - sight, hearing, smell, touch, and taste - to interpret the environment around us. While these senses normally work in concert to add richness and depth to our immediate perceptions, arguably the most important in relation to reading paper-based artifacts are sight and touch. Tactile interaction with the physicality of paper helps provide the trained observer with essential and complementary information arising from the evidence 'at hand'.

Muffling haptic sensations through glove-use obscures one's perceptions about paper, and by extension, the object as a whole. In a mechanical sense, the ability to feel the thickness and pliability of the sheet is obfuscated, making it impossible, for example, to determine how many leaves are being handled. Inadvertently gathering up two or three pages at once is common when the sensation of touch is impaired, resulting in clumsy fumbling to separate the leaves, or to turn a page, hampered by the awkward constraints of a ill-fitting cotton glove. Catching the loosely-woven fabric on tiny irregularities in paper – a degraded brittle edge, or an existing tear – inevitably leads to unintended damage made all the more frustrating by the knowledge that we handle similar objects with less effort bare handed.

In a recent study conducted to better understand the human sense of touch, test subjects' fingertips were placed on a sliding object (like a flat computer mouse). Without seeing the object, the subjects were asked to determine whether this gliding object was traveling horizontally over a bump or a hole. Due to its inertia, subjects always perceived the sliding object as traveling over a bump, regardless of whether the surface beneath was indeed a bump, a hole, or a flat plane (Flanagan and Lederman 2001). This problem of accurately perceiving three-dimensional characteristics when the sense of touch is impaired bears on the present argument, as misperceptions about spatial relationships accounts for the increased propensity for people to incrementally damage paper when wearing gloves.

Gloves obscure nearly all perception of paper as a material, and obliterate information about its surface characteristics – such as texture (e.g., whether a sheet

is wove or laid), and most critically, the sheet's condition – that would otherwise be communicated intuitively through contact with the bare skin. It is for this reason that book and paper conservators do not wear gloves when examining or treating objects.

When Did Glove-use Begin?

"Fouquet, a learned book collector of France, used to keep a pile of white gloves in the anti-room of his library, and no visitor was allowed to cross the threshold, or to handle a book without putting on a pair, lest he should soil the precious volumes with naked hands. Such a refinement of care to keep books immaculate is not to be expected in this age of the world; and yet, a librarian who respects his calling is often tempted to wish that there were some means of compelling people to be more careful about books than they are." (Spofford 1905, 116)².

According to Nishimura (2003), the donning of textile gloves for preservation purposes probably originated in the nineteenth century with photographers wanting to prevent fingerprints from marring their negatives. A search through the early book and paper conservation literature, however, reveals no mention of gloves, suggesting that their use – and certainly their wide acceptance by libraries and archives – is a relatively recent occurrence. Even as recently as the 1986 IFLA conference in Vienna where Hendriks advised that "unsleeved negatives and prints should be handled only with protective lintless cotton or nylon gloves" (Hendriks 1987, 63), Library of Congress representative Merrily Smith, in her very thorough paper on library care and handling practices, made no mention of glove-use in libraries (Smith 1987).

Accordingly, it appears that cotton glove-use spread to the rare book and archives reading room only in the last decade of the twentieth century, suggesting this practice is less than 20 years old. This development was probably driven by the good intentions of some curators with ready access to archival supply catalogues in which vendors have increasingly represented glove-use as a standard component of library and archival practice. Yet, while many curators remain convinced of the efficacy of glove-use for patrons in reading rooms, others do not. An October 1999 online discussion on a special collections website revealed that some book curators strongly oppose glove-use.

² Ainsworth R. Spofford was the US Librarian of Congress from 1864–1897.

Throwing down the gauntlet, they wrote:

"I require my readers NEVER to wear gloves of any kind, except when handling photographs. Where is the logic in making the nice people wear an ill-fitting thing which makes them more clumsy and reduces their sense of touch?"

Martin Antonetti, Curator of Rare Books, Neilson Library, Smith College (Antonetti, 1999).

"Readers are much more likely to damage books and other printed material wearing gloves than not."

Terry Belanger, University Professor and Honorary Curator of Special Collections, Book Arts Press and Rare Book School, University of Virginia (Belanger, 1999).

"Cotton [gloves] can snag on fragile pages... Besides, bare hands are much easier to keep clean. We require all patrons to wash their hands before handling materials, and make sure they know we're washing our own as well."

Elizabeth E. Fuller, Librarian, Rosenbach Museum and Library, Philadelphia (Fuller, 1999).

What Is Lost or Gained?

[And when I had touched the letter, I felt, in Tennyson's words, that the dead man had touched me from the past: I have made my life among "Those fallen leaves which keep their green / The noble letters of the dead."] (Byatt 1991, 115).

While surrogates such as microfilm, photocopies, or digital images can be used to protect some collections from above-average use, requiring patrons to wear apparel that tacitly divorces them from the artifacts they are handling is more than a simple preservation issue. As Western society becomes progressively disengaged from historical hand and machine crafts, a reader's aesthetic framework about the unique attributes of material culture is increasingly diminished. Maintaining a physical connection to artifacts helps both patron and curator retain a sense of the richness of the cultures that produced and used this material; historical 'stuff' is implicitly encoded with links to the past through its materiality.

The growing digital environment already eliminates many of the requirements for gaining access to cultural treasures that predominated only five years ago, displacing objects with 'virtual' artifacts. Instead of placing systematic restrictions on the people we profess

to serve, professional librarians and archivists should consider the benefits arising from enriching the patron's experience and literally put them 'in touch' with their cultural heritage.

Recommendations

"A wash-room was provided. The little urchins were at first compelled and then allowed to wash before coming into the library. We say allowed, for they soon ceased to regard it as an imposition and came to look upon it as a privilege – as great fun, in fact."
(Anonymous 1890, 260)

Simply requiring patrons to wash their hands with ordinary soap and water – rubbing hands together vigorously for ten to fifteen seconds, scrubbing all skin surfaces, and thoroughly rinsing and drying (Abouzelof 1999) – before examining artifacts and periodically thereafter as they feel dirty is adequate to safeguard rare books and archival collections. Implementing this practice would allow people to equate their skin's cleanliness with appropriate collection care, both in the institutional reading room as well as at home. For this simple procedure to prove effective, reading rooms need to provide a convenient means for hand cleaning. The obvious solution is to require patrons to wash their hands before entering the reading room, ideally at a small sink installed nearby, or in the public lavatory.

A compromise to this recommendation is to provide inexpensive, disposable, alcohol-saturated towelettes for patrons as the means of cleaning their hands without leaving the reading room. Individually packaged towelettes can be purchased in quantities of 1000 for less than two cents apiece (\$US) from companies that distribute disposable janitorial supplies. One should avoid choosing products containing skin lotions, but an extensive array of options are available, many of which can be viewed at the website, Gallery of the Modern Moist Towelette Collecting.³ Instituting a 'hand cleaning station' somewhere in the reading room would simply consist of a container of pre-packaged towelettes, a roll of paper towels for removing residual moisture left by the towelette, and a wastebasket for depositing used hand cleaning products. Requirements that staff also avail themselves of this public 'station' would reinforce the need for readers to routinely 'wash up'.

³ The Gallery of the Modern Moist Towelette Collecting website can be found at <http://members.aol.com/moisttwl/>.

If gloves need to be worn for the protection of staff and readers, the authors recommend a close-fitting, unpowdered, vinyl glove to avoid problems with latex allergies.⁴ Tactile sensations will be diminished, but when handling mold or very dirty material, health and safety issues must prevail. Finally, the authors caution that whether wearing gloves or not, running fingers over manuscript or printed areas of the text can unnecessarily damage fragile paper or flaking media (commonly associated with iron gall ink), raised impressions (such as intaglio prints), or friable media (including pastels).

Conclusion

Blanket policies mandating that patrons and curators wear any kind of glove when handling archival and library materials need to be reexamined. It seems clear from the observation of many heavily used books that even routine handling does not cause chemical damage to paper. Certainly, conservators do not wear gloves when treating books or paper artifacts, except in those few instances where their own hands require protection. White cotton gloves provide no guarantee of protecting books and paper from perspiration and dirt, yet they increase the likelihood of people inflicting physical damage to collection material. Implementing a universally observed, hand-cleaning policy is a reasonable and effective alternative to glove-use, and it follows the standard protocol employed by book and paper conservators before handling the very same material.

Author Biographies

Dr. Cathleen A. Baker currently holds a Samuel H. Kress Conservation Publication Fellowship to prepare the manuscript titled "Nineteenth-Century American Paper: Technologies, Materials, Characteristics, and Conservation" from the Foundation of the American Institute for Conservation. She taught paper conservation in SUNY College at Buffalo's Art Conservation Department for fifteen years before retiring in 1993 to write "By His Own Labor: The Biography of Dard Hunter" (2000). She has also taught numerous conservation and preservation workshops in the United States and for ICCROM.

⁴ Information about latex allergies can be found at the Latex Allergy Links website <http://latexallergylinks.tripod.com/>

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Falsas ideas sobre los guantes blancos

En las bibliotecas y los servicios de archivos, la consulta de documentos raros y preciosos generalmente va acompañada, desde hace unos quince años, del uso de guantes de algodón blanco. Sin embargo, esta práctica puede ser más dañina que eficaz. Efectivamente, los guantes se ensucian tan fácilmente como las manos desnudas y pueden transportar todo tipo de agentes contaminantes: polvo, residuos de productos de maquillaje, sebo... Por otra parte, atenúan las percepciones del tacto y pueden provocar movimientos torpes, como por ejemplo, agarrar dos o tres páginas al mismo tiempo. Finalmente, los guantes son muy absorbentes, tanto interna como externamente. En el interior del guante, la mano transpira, fenómeno que puede deteriorar el documento. Por el contrario, se ha constatado que si se lavan y enjuagan las manos cuidadosamente, la mayoría de los usuarios no trasladan suficiente transpiración para dañar el papel.

A lo largo de los siglos, el contacto de la mano del hombre no parece haber sido particularmente nefasto para los documentos; mientras que los efectos de la contaminación, el calor, la luz, las malas condiciones de almacenamiento y el grado de acidez contenido en el papel son actualmente mucho más destructivas.

A fin de preservar los libros raros y los documentos de archivo (las fotografías representan un caso particular), bastaría entonces con lavarse las manos con agua y jabón, frotándolas vigorosamente de diez a quince segundos, y enjuagárselas y secárselas. En los casos en que no sea posible hacerlo, el uso de toallas desechables impregnadas de alcohol podría ser un buen sustituto.

Estas medidas sencillas y eficaces permiten conservar el placer del contacto con el documento e igualmente comprender el patrimonio cultural contenido en él.