Mel says, “This is swell! But it’s not ideal—it’s a free, grainy PDF.”

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Menstrual Joy

Compiled by Nan Swift, Improbable Research staff

Menstrual Joy (1)


Menstrual Joy (2)


Menstrual Joy (3)

Contents

The features marked with a star (*) are based entirely on material taken straight from standard research (and other Official and Therefore Always Correct) literature. Many of the other articles are genuine, too, but we don’t know which ones.

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Highlight from Michelangelo’s Sistine Chapel ceiling painting, with extra fingers and extra meaning added. Painting: Michelangelo and Milo Sacramento.

On the Back Cover

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(see WWW.IMPROBABLE.COM for details of these and other events)
Ig Nobel Prize Ceremony—Oct 4, 2007
Ig Informal Lectures—Oct 6, 2007
Genoa Science Festival—Oct 26, 2007
Imperial College London—November 2007
AIR Vents
Exhalations from our readers

NOTE: The opinions expressed here represent the opinions of the authors and do not necessarily represent the opinions of those who hold other opinions.

The Correct Photo

The photograph accompanying my letter (AIR Vents 13:4) showed a steam-roller machine crushing an early refrigerator. You somehow managed to substitute it for the correct photo, which shows the 1926 demonstration of L.T. Lucerne’s electro-mechanical anti-phrenology hat. Here is another copy of the correct photo. Please publish it.

Bennett Sato
L.T. Lucerne Foundation

Spot the Cultural Difference in “Spot-the-Difference Quiz”

I did a simple test that demonstrates the importance of cultural differences in solving your “Spot-the-Difference Quiz.”

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Analysis: Subject 1 was born and raised in Western Canada, in a family with a few dollars, if little sense. Subject 2 was born and raised in England, where everyone is so rich they measure their money in pounds. The configuration “10q” is meaningless in either country unless one studies transcriptional profiles (as so few of us do). By contrast, “10p” has a familiar and specific meaning in England, expressed as “ten pence”. On casual inspection, Subject 1 saw “10p” and “10q” as identical, since each is meaningless to him and they differ visually only in a minor detail. But, to Subject 2, the “10p” was instantly differentiated from “10q” because one is meaningful, the other not.

Conclusion: If you’re hanging around with Brits, best watch your ps and qs.

A.K. Masterson
Birmingham, UK

Bremen-Walsh Excitement

Here is an historical item that was almost lost to history. Please help me restore it to its proper place of prominence. You are undoubtedly familiar with the work of my parents, Adam and Kindelina Bremen-Walsh, and of the school of psychotherapy my great-great grandmother’s hand. Not only is the drawing corrected (one of the fingers was backwards—don’t know how that happened) but more important, is the information. This was a model 24-C, the kind she usually supplied to scientists and heads of state. The fork was removable in the heads-of-state version. Thank you for running this corrected version.

A.K. Masterson
Birmingham, UK

G.G.-Grandma’s Hand, As It Really Was

Here is a corrected version of my great-great grandmother’s hand. Not only is the drawing corrected (one of the fingers was backwards—don’t know how that happened) but more important, is the information. This was a model 24-C, the kind she usually supplied to scientists and heads of state. The fork was removable in the heads-of-state version. Thank you for running this corrected version.

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Winged Hoof

While perusing “Chicken Chicken Chicken: Chicken Chicken Chicken” in the September-October 2006 issue of your magazine, I couldn’t help but be reminded of the grammatically correct sentence “Buffalo buffalo buffalo buffalo buffalo buffalo buffalo buffalo.”

Steven Pinker’s book The Language Instinct explains it, in this passage:

“Buffalo buffalo buffalo buffalo buffalo buffalo buffalo buffalo.”

Doug Hatlelid
North Vancouver, British Columbia

Pinker Buffalo

Am I correct in my assumption that “Chicken Chicken Chicken: Chicken Chicken Chicken” was inspired by “Buffalo buffalo buffalo buffalo buffalo buffalo buffalo buffalo buffalo” and that a melding of the two is possibly the source for the name “buffalo wings”?

Laura Bretton
San Diego, California

Historical Museum
Arles, France

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A.K. Masterson
Birmingham, UK
that is named after them. This drawing is a copy of the original Bremen-Walsh Test image, used by every Bremen-Walshian psychiatrist as the basic emotion-clarity diagnostic test (the famous “Tri-Mustache Test”) for nearly seventy-seven years now. Biographers have reported that this copy of the original was lost. As you can see, that is not so. I hope you will publish it.

A.K. Bremen-Walsh, PhD, MD, LLn, RN Vienna, Austria and Launceston, Tasmania, Australia

The Foundational Fritz

Enough about the Wenze sisters (in your letters column, incessantly). Let me tell you about my favorite Wenze: Prof. Dr.-Ing Fritz Wenze, author of the 1988 classic book Bauaufnahme: Befunderhebung und Shadensanalyse an historischen Bauwerken. Of course, if you don’t live and breathe historic buildings, you may have a different favorite Wenze.

Alicia Meza Fuentes
Director, Bolles Associates
Cochabamba, Bolivia

Mel in Barcelona, Correction Yadda

I am so sorry. Once again, I must ask you to publish a correction. Surely this sets some record; many people make long series of errors, but almost none of them discuss it in public. So here is the fourth or so in the series of corrections I have been forced to make to the photograph from our archives that shows Mel (the little bearded man who keeps appearing, albeit posthumously, in your letters column) during his brief visit to the city of Barcelona in 1929. My colleagues have furnished convincing evidence that the man indicated in my last letter as being Mel is not Mel but is someone other than Mel. I have indicated on this corrected version what I now believe to be the true location of Mel as best we are able to determine. As I wrote in my previous letters, “Unfortunately he is not facing directly the camera, so the identification cannot be 100 percent.” I hope you can print this corrected corrected corrected corrected photograph.

Annals of Improbable Research

Editorial Board

We note with sadness the passing of Paul McCready, a member of our editorial board. He will be long remembered as a great pioneer of human-powered flight.

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Stochastic Processes
(Selected at random from amongst our subscribers)

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Women’s Health
Andrea Dunaf, Northwestern U.
JoAnn Manson, Brigham & Women’s Hosp.
Improbable Research Review

Improbable theories, experiments, and conclusions

compiled by Dirk Manley, Improbable Research staff

Asymmetry of Kissing


I observed kissing couples in public places (international airports, large railway stations, beaches and parks) in the United States, Germany and Turkey. The head-turning behaviour of each couple was recorded for a single kiss, with only the first being counted in instances of multiple kissing. The following criteria had to be met to qualify: lip contact, face-to-face positioning, no hand-held objects (as these might induce a side preference), and an obvious head-turning direction during kissing. Subjects’ ages ranged from about 13–70 years.

No Close Second

“Determinations Regarding ‘First-Rate’ and ‘Third-Rate,’” Duan Si, Chinese Education and Society, July–August 1999, vol. 32, no. 4, pp. 79–81. (Thanks to Jayanti Addleman for bringing this to our attention.)

Paprika on Armpit Effect in Cowbirds


Kinetics of Cemetery Organization in Ants


Epic Meeting

“Modelling of Interaction Between a Spatula and a Human Brain,” Kim V. Hansen, Lars Brix, Christian F. Pedersen, Jens P. Haase and Ole V. Larsen, Medical Image Analysis, vol. 8, 2004, pp. 23–33. (Thanks to Kristine Danowski for bringing this to our attention.) The authors, who are at Aalborg University, Denmark, explain that:

The idea is to provide surgeons with a tool which can teach them the correlation between deformation and applied force.

We welcome your suggestions for this column. Please enclose the full citation (no abbreviations!) and, if possible, a copy of the paper.
Improbable Medical Review

Improbable diagnoses, techniques, and research

compiled by Bertha Vanatian, Improbable Research staff

Everything in Its Proper Place


Arm-Wrestling: Humerus Twist


Competitors engaged in Indian and/or wrist wrestling, a sport receiving increased interest, [are] known to sustain humeral fractures. It is thought that these particular fractures are the result of bending moment, axial compression, and torsional forces applied to the humerus.

Arm-Wrestling and the Man (and the Machine)


Arm-Wrestling and the Model


It is suggested that motor reactions may be elicited in an observer as a consequence of his exposure to a model and that such reactions may become conditioned to environmental events. An experiment is reported in which observers showed greater EMG [electromyographic] activity in the arm while watching models arm wrestle than while watching a model stutter, and greater lip EMG activity while watching a model stutter than while watching arm wrestling. Some evidence for conditioning was found in the arm activity of males watching wrestling.

Shake and Jumble


We welcome your suggestions for this column. Please enclose the full citation (no abbreviations!) and, if possible, a copy of the paper.
Finger Celebrities
Big names in finger measurement

by Alice Shirrell Kaswell and Stephen Drew, Improbable Research staff
Paintings by Nan Swift, Improbable Research staff

Many researchers now spend their careers, and build their professional reputations, studying finger lengths. This new academic field has produced several celebrities. This article gazes at some of the most brightly blazing academic finger stars.

[Editor’s note: For a quick tour through the ever-widening archives of finger research, see “The Meaning of the Finger,” elsewhere in this issue of Annals of Improbable Research.]

Lingo, Lingo
An important piece of finger length lingo is the phrase “2D:4D.” This is the ratio of the second finger’s length to that of the fourth finger. It is, the studies tell us, the key to almost everything.

There is a related, though subtler, concept called “fluctuating asymmetry,” or “FA.” One researcher defines fluctuating asymmetry in a simple phrase: it “represents non-directional deviations from perfect symmetry in morphological characters.”

***

John Thomas Manning, Finger Patriarch

Professor John Thomas Manning of the University of Liverpool is the star of stars, so far as fingers are concerned. Though by no means elderly, Professor Manning is the Grand Old Man of finger-length ratio. An October 17, 2006 profile in the Washington Post says:

In 1998, British researcher John Thomas Manning suggested that the difference between male and female digit ratios stemmed from prenatal exposure to the hormones testosterone and estrogen. If the digit ratio—which is established by the time a fetus is 9 weeks old and remains constant throughout a person’s life—reflects the level of that exposure, Manning reasoned, then it might serve as a marker for other conditions—including predisposition to many diseases—thought to be affected by prenatal hormone exposure.

In 2002 Professor Manning published a book Digit Ratio: A Pointer to Fertility, Behavior, and Health (Rutgers University Press). The back cover conveys some of the excitement that lies within:

In this book, Manning presents evidence for how 2D:4D correlates with traits ranging from sperm counts, family size, musical genius, and sporting prowess, to autism, depression, homosexuality, heart attacks, and breast cancer.

Here are some of Professor Manning’s most provocative studies.

Manning: Skiing


This preliminary study aimed to assess the relationship between 2D:4D ratio and skiing speed on the basis of times recorded on a 200 m slalom course by 72 skiers. Each skier made 2 individual timed runs and the fastest time was used for comparisons....

Low 2D:4D was associated with fast skiing times.
Manning: Susceptibility to All Disease?


The ratio between the length of the 2nd and 4th digits is: (a) fixed in utero; (b) lower in men than in women; (c) negatively related to testosterone and sperm counts; and (d) positively related to oestrogen concentrations. Prenatal levels of testosterone and oestrogen have been implicated in infertility, autism, dyslexia, migraine, stammering, immune dysfunction, myocardial infarction and breast cancer. We suggest that 2D:4D ratio is predictive of these diseases.

Manning: Autism


2D:4D ratio may be a possible marker for autism which could implicate prenatal testosterone in its aetiology.

Manning: Psychopathological Kids


Manning: Contracting HIV and AIDS


The incidence of HIV and AIDS is high in sub-Saharan Africa and in male homosexuals.... There is evidence that black South Africans have lower 2D:4D ratios than most other populations and male homosexuals have lower 2D:4D ratios than male heterosexuals. Men with low 2D:4D ratios may also be more sexually active and/or more fertile than men with high ratio. We suggest that men and women with low 2D:4D are susceptible to HIV infection and AIDS and babies with low 2D:4D ratio susceptible to vertical transmission.

Manning: Male Sports and Fighting


Professional football players had lower 2D:4D ratios than controls. Football players in 1st team squads had lower 2D:4D than reserves or youth team players. Men who had represented their country had lower ratios than those who had not... We suggest that prenatal and adult testosterone promotes the development and maintenance of traits which are useful in sports and athletics disciplines and in male:male fighting.

Manning: Male Dominance

Manning: Sperm, Sperm, Sperm

Manning: Reproductive Success

We report data on the following. (a) reproductive success and 2D:4D from England, Germany, Spain, Hungary (ethnic Hungarians and Gypsy subjects), Poland, and Jamaica (women only). Significant negative associations were found between 2D:4D in men and reproductive success in the English and Spanish samples and significant positive relationships between 2D:4D in women and reproductive success in the English, German, and Hungarian samples. The English sample also showed that married women had higher 2D:4D ratios than unmarried women.

Manning: Male Homosexuality

We report that (a) 2D:4D was lower in a sample of 88 homosexual men than in 88 sex- and age-matched controls recruited without regard to sexual orientation, (b) within the homosexual sample, there was a significant positive relationship between mean 2D:4D ratio and exclusive homosexuality, (c) overall, there was a decrease in 2D:4D from controls to homosexual men to bisexual men.

***

Emma Nelson, Student of the Fingers of Early Man
Emma Nelson, a graduate student at the University of Liverpool, has done a series of finger-related studies, some with John T. Manning, others with others. Here are two of the most salient.

Nelson: Sex Cave Art Hand Stencils

Nelson: Chimp Testes Size and Dominance
“The Length of the 2nd to 4th Digit Ratio (2D:4D), Testes Size and Dominance in a Group of Captive Chimpanzees (Pan troglodytes),” E.C. Nelson, E. Videan and S. Shultz. This study is not yet
Martin Voracek, Scholar of Manly Fingers

Martin Voracek of the University of Vienna takes a manifold interest in fingers. He has collaborated with finger research celebrity John T. Manning, and done other research independently. Dr. Voracek’s work on this and many other subjects was featured in the special Rivalry issue of AIR (vol. 13, no. 3). Here we mention his finger work but briefly.

Voracek: Danish Men and How to Measure Them


Voracek and Manning: Austrian Men and Their Conquests


Voracek and Manning: Austrian and German Men and Their Conquests


We report two studies concerning the relationship between a probable negative correlate of prenatal testosterone, the ratio of the length of 2nd and 4th digits (2D:4D), and number of sexual partners per individual (NSP) in men... We tested [our hypothesis] in two samples of men: (a) German heterosexual males recruited from a University and from the general population; (b) Austrian heterosexual and homosexual men recruited from offices and social clubs in Vienna.

The relationship between number of sexual partners and 2D:4D appears to be confined to heterosexual men.
**Voracek: Mice and Men**

“Of Mice And Men—Cross-Species Digit Ratio (2D:4D) Research: Comment on Bailey, Wahlsten, and Hurd (2005),” M. Voracek, *Genes, Brain and Behavior*, vol. 5, 2006, pp. 299. (For the original article upon which Professor Voracek is commenting, as well as the original authors’ reply to his comment, see the below section on Peter Hurd.)

**Voracek: Fingers and Fencing**


**Voracek and Manning: Fingers and Penis**


**Voracek: Thumbs**


***

**Marc Breedlove, Discoverer of Lesbian Finger Distinctions**

S. Marc Breedlove is Barnett Rosenberg Professor of Neuroscience at Michigan State University. He has become a giant of finger research. Here are two of his most heralded studies.

**Breedlove: Sexual Orientation and Fingers**


Among heterosexuals, the mean 2D:4D ratio is larger in women than in men, especially on the right hand. The right-hand 2D:4D ratio of homosexual women is more masculine (that is, smaller) than that of heterosexual women. Men with more than one older brother are more likely to be homosexual and have a significantly more masculine right-hand 2D:4D ratio than men without older brothers. Subjects were offered lottery ‘scratcher’ tickets for their participation.

**Breedlove: Lesbian Fingers at a Street Fair**


We surveyed individuals from a gay pride street fair and found that
lesbians who identified themselves as “butch” had a significantly smaller 2D:4D than did those who identified themselves as “femme.”

***

Peter Hurd, Seeker of Hockey Players and Depressed Men

Peter Hurd is Associate Professor of Psychology at the University of Alberta. He is a prolific finger-length researcher. A March 3, 2005 press release from the university says:

Hurd is conducting ongoing research in this area, including a study that involves measuring hockey players’ finger lengths and cross-referencing the results with each player’s penalty minutes.

Here are two of his most celebrated studies.

Hurd: Inbred Mouse Strains

Hurd: Depressed Men


Hurd: Nay, Nay, Voracek, Not in Mice


---

Mark Brosnan, Examiner of Scholars’ Fingers

Dr. Mark Brosnan is a psychology researcher at the University of Bath, and a noted comparative-digit-length scholar. On his web site, Dr. Brosnan reports an array of discoveries he made by studying 100 of his colleagues at the university. In his words:

Digit ratio is significantly different between:

- Members of the Science Faculty and members of the HaSS/Management Faculty
- Those with children and those without children
- Those with children who have a psychological diagnosis in the family (typically Dyslexia) and those with children who do not have a psychological diagnosis in the family.

Digit ratio is NOT significantly different between:

- Males and females
- Lecturers, Senior Lecturers, Readers and Professors
- Left and right handers

Dr. Brosnan wrote a study, soon to be published, about finger ratios and mathematical ability. In it, he explains:

Recent research has identified a relationship between digit ratio and basic numeric competency.... The present study extended this finding to academic assessment, namely the Standardised Assessment Tests undertaken in numeracy and literacy by children in the UK at the age of 7.... Digit ratios were calculated for 75 (mainly Caucasian) children aged between 6 and 7 attending a state funded infant school. The digit ratios were then correlated with the results from their national standard assessment tests (SATs). A significant correlation was found as hypothesised.... These effects were small.

---

Siegfried Dewitte and Bram Van den Bergh, Finger Financialists

Professor Siegfried Dewitte is an applied economist at Katholieke Universiteit Leuven. Bram Van den Bergh trained under Professor Dewitte. They are rising stars in comparative-finger-length explication. Their work, compared with that of some of their competitors, is abstruse. Here are the two best-known of their publications.

Dewitte: Fingers and Cooperation

1, 2006, pp. 111-115. The authors explain:

[We] predicted that a low 2D:4D would be associated with high levels of egoism and altruism and low levels of common cooperativeness (i.e. contributing exactly one’s fair share). We found the exact opposite: participants with a low 2D:4D were more likely to act cooperatively and less likely to act altruistically and egoistically.

**Dewitte and Van den Bergh: Fingers and Ultimatums**


Three experimental studies demonstrate that ‘sex-related cues’ impact human decision-making in ultimatum games [games in which the players must split a pot of money amongst themselves]. Our studies show that exposure to pictures of sexy women or lingerie increases the likelihood of accepting unfair offers. Digit ratios of responders are reliably associated with their behaviour: males with lower digit ratios are more likely to reject an unfair split in neutral contexts, but more likely to accept unfair offers in sex-related contexts.
The Meaning of the Finger
A pointed look at an emerging field of research

by Alice Shirrell Kaswell, Improbable Research staff
with finger drawings from Jackson’s Gymnastics for the Fingers and Wrist, N. Trubner & Co., London, 1865

Fingers are hot in the research world. Here is a quick tour of what scientists say they have discovered.
The study of finger lengths is now the basis of many academic careers. So many studies have been published that the field—it seems no exaggeration to call it a field—has produced several celebrities. For a look at some of the top personalities, see “Finger Celebrities” elsewhere in this issue of the Annals of Improbable Research.

The Big Idea, and the Rise of the Finger
Until recently, people who did research on fingers either measured them or, if they were broken, repaired them. Then came an idea about what fingers might mean. Here is the idea in a six-part nutshell:

1. The body’s many hormones—chemical messengers—are involved in many things that happen in your body during fetus-hood, childhood and adolescence. These many things happen at various times, in various ways.
2. Each of these hormones has many different effects. Scientists have noticed some of these effects, and understand a few of them at least a little bit.
3. Testosterone is one of the many hormones.
4. Maybe testosterone somehow, at some time, affects how long various fingers grow.
5. Maybe the relative lengths of someone’s fingers tells something about how much testosterone was in the body at some point early in their life.
6. Maybe the amount of testosterone in someone’s body at some point early in their life affects lots of other things.

This simple idea is often credited to Dr. John Manning of the University of Liverpool. Dr. Manning is now one of the world’s great finger research celebrities (see “Finger Celebrities” elsewhere in this issue).
The rest of this article is a too-quick look at what researchers have done with this idea, and at some other finger research. But first, a mention of the way finger-length research was done before the coming of the idea.

Differences Long Unnoticed and/or Ignored
In 1952, V. Rae Phelps, at the University of Texas and at Tulane University, compiled a capsule history of early finger findings, waxing nearly poetic about the researchers’ many missteps and mistakes.

“Relative Index Finger Length as a Sex-Influenced Trait in Man,” V. Rae Phelps, American Journal of Human Genetics, vol. 4, no. 2, 1952, pp. 72-89. Professor Phelps reports:

One of the most frequently reported normal variations in the human hand is the length of the index finger as compared with the ring finger. Ecker (1875) noted that three manifestations of relative finger length may be discerned in the living model: index finger shorter than ring finger; index finger equal in length to ring finger; and index finger longer than ring finger. Many of the earlier workers failed to recognize this variability in relative index finger length. Gerdy (1829) stated that the index finger is always shorter than the ring finger, while according to
Carus (1853) and Humphry (1861), the index finger exceeds the ring finger in length. Langer (1865) declared that the index finger is shorter than or nearly equal to the ring finger. Alix (1867), Grining (1886), Baker (1888), Schultz (1926), and Wood-Jones (1920, 1941) point out that although the index finger is usually shorter than the ring finger, it may in certain instances exceed the length of the ring finger....

* * *

Several scientists have looked at little fingers.

Is Little-Finger Length a Family Legacy?

The author, at the University of Delhi, India, reports:

An attempt has been made to see whether the length of the little finger (based upon its approach to the last interphalangeal joint of the ring finger) follows any hereditary pattern in its transmission. For this 100 biological families along with their offsprings have been analysed. Results show that heredity certainly plays a role for this trait.

Is Little-Finger Length a Family Legacy?


* * *

Some have looked at other fingers. F. Holik and O. Slaby went further than most.

The Sixth Finger


* * *

Much research has been devoted to the index finger, and to finger-pointing.

Proudly Noted Extra Index Fingers


[A published study by a Dr. Wood] found 145 patients with polydactyly in the records of the University of Iowa Hospitals.... A duplication of the little finger occurred in sixty-two, of the thumb in 101, of the ring finger in twenty-six, the long finger in eight, and of the index finger in seven. This is the only series with so many cases of double index. Wood found no other direct references to this anomaly of double index finger in the English literature. He believed it to be “a previously undescribed congenital anomaly of the hand.” [But this] anomaly has been described before.... I give here the references on doubling of the index finger found in my own study of polydactyly.
In contrast to humans, chimpanzees (Pan troglodytes) do not develop a pointing gesture with the index finger and rarely point by gesturing with hands or arms. In this article we report the existence of a difference in the resting morphology of the index finger in humans and chimpanzees. We speculate on how this species difference may be related to species differences in pointing with the index finger.

Inhuman Finger-Pointing (Baboons)


A growing body of literature suggests that the ratio of the lengths of the second to fourth digits on human hands is sexually dimorphic and associated with prenatal exposure to gonadal hormones, circulating serum testosterone, and a number of psychological and behavioral measures. Little research has investigated digit ratios in nonhuman species. In the present study, we investigated sex differences in digit ratios and their possible association with serum testosterone in a captive group of Guinea baboons (Papio papio).

Inhuman Finger-Pointing (Frogs)


In-Human Finger Pointing (Lincoln)

“Good Samaritan Surgeon Wrongly Accused of Contributing to President Lincoln’s Death: An Experimental Study of the President’s Fatal Wound,” J.K. Lattimer and A. Laidlaw, Journal of the American College of Surgeons, vol. 182, no. 5, May 1996, pp. 431–48. (Thanks to John Dudley for bringing this to our attention.) The authors, who are at the College of Physicians and Surgeons of Columbia University, in New York City, explain that:

BACKGROUND: When President Abraham Lincoln was shot in the back of the head at Ford’s Theater in Washington, D.C., on April 14, 1865, he was immediately rendered unconscious and apneic. Doctor Charles A. Leale, an Army surgeon, who had special training in the care of brain injuries, rushed to Lincoln’s assistance.... In February 1995, an article in a popular magazine alleged that Doctor Leale had caused further (fatal) damage to Lincoln’s brain by thrusting his finger into the brain through the bullet hole.... CONCLUSIONS: The wound made by John Wilkes Booth’s derringer ball in Lincoln’s brain was devastating; it was clearly the cause of his death. Good Samaritan surgeon Leale has been falsely accused of contributing to Lincoln’s death.

The Meaning of the Finger (1)

“L’index significant (The Pointed Index Finger)” [article in French], G. Calbris, Études de Linguistique Appliquée, no. 35, July–September 1979, pp. 91–109.

In the framework of a study of nonverbal communication, the various meanings attached to the pointed index finger are analyzed. The question is raised as to what extent the findings hold for cultures other than French.
The Meaning of the Finger (2)


Reports on two studies that looked at the spontaneous face-to-face interaction of three-month-old infants with their mothers. Facial and manual actions, gaze direction, and vocalizations were coded. Results showed a correlation between index-finger extensions and syllabic sounds, suggesting a strong connection between speech and the pointing gesture long before the infant can actually talk.

* * *

Research has probed not only the meaning of the finger, but also some of its uses.

The Uses of the Finger: Depressing


* * *

Other research has aimed for better ways to observe the finger.

Looking at the Finger: Plethysmograph

“A Controlled Temperature Plethysmograph for the Index Finger,” A. D. M. Greenfield and J. T. Shepherd, *Proceedings of the Physiological Society*, vol. 11, nos. 3–4, April 1, 1950, pp. 40–1. The authors, at the Queen’s University of Belfast, explain:

This plethysmograph was designed for an investigation in which it was desired to make observations on the finger at controlled temperatures, and with various heads of external pressure up to 35 cm. of water.

* * *

The Finger-Length Proportion Studies (and Their Lingo)

The numerous studies about relative Finger-Length Proportions are the crown jewels of modern finger research, according to those who do the studies. Here are some of them. Others are described in the article “Finger Celebrities.”

A key piece of lingo is the phrase “2D:4D.” This is a ratio of two numbers: the length of the second finger to the length of the fourth finger. This ratio is, reportedly, freighted with significance.

Some researchers also discuss a related notion called “fluctuating asymmetry,” or “FA.” There are many definitions for this reportedly fascinating concept. One definition, perhaps typical, says that fluctuating asymmetry “represents non-directional deviations from perfect symmetry in morphological characters.”
Women’s Ability to Read Maps
“Spatial Navigation Related to the Ratio of Second to Fourth Digit Length in Women,” Árpád Csathó, Anikó Osváth, Kázmér Karádi, Éva Bicsák, John Manning and János Kállai, Learning and Individual Differences, vol. 13, 2003, 239–49. The authors, variously at the University of Pécs, Hungary and at the University of Liverpool, report:

In this study, the 2D:4D ratio was measured in a sample of 46 female university students. The subjects’ place learning ability was tested in a real arena maze (RAM). Our results tend to support an association between prenatal gonadal hormone concentration and some aspects of spatial navigation.

Women’s Ability to Read Maps and Use Numbers
“Second-to-fourth Digit Length, Testosterone and Spatial Ability,” Petra Kempel, B. Gohlke, J. Klemkau, P. Zinsberger, M. Reuter and J. Hennig, Intelligence, vol. 33, no. 3, May–June 2005, pp. 215–30. The authors, at the University of Giessen, Germany, find that, on tasks such as reading a map:

Females who exhibit a “male-like” finger length ratio pattern, which is associated with a higher prenatal level of testosterone, outperform females who display higher digit ratios on numerical as well as on spatial abilities.

Marks of Male University Students

Manual Labor and Finger Proportion

Finger Lengths and Handwriting Style

Fingering the Father
“The Diagnostic Value of the Finger Length Proportion in Paternity Determination” [article in German], H.D. Rosler, Deutsche Zeitschrift für die gesamte gerichtliche Medizin, vol. 48, no. 1, 1958, pp. 73–9.

Fingering the Fetus

Sporting Ability in Women
“The Big Finger—The Second to Fourth Digit Ratio is a Predictor of Sporting Ability in Women,” S.N. Paul, B.S. Kato,
J.L. Hunkin, S. Vivekanandan and T.D. Spector, *British Journal of Sports Medicine*, vol. 40, 2006, pp. 981–3. *(Thanks to David Talbot for bringing this to our attention.)* The authors, at St Thomas’ Hospital, London, report:

**Methods:** Hand radiographs from 607 women (mean age 54 years) were used to estimate 2d:4d. Ranking of sports ability was on a scale (1–5).

**Conclusions:** These results suggest that a low 2d:4d ratio is related to increased female sports ability. It can be postulated that this ratio may predict potential sports ability.

**Attractiveness, Attractiveness, Attractiveness**


Our results confirm that male 2D:4D was significantly negatively correlated with women’s ratings of men’s physical attractiveness and levels of courtship-like behavior during a brief conversation.

**Sexual Orientation, Sexual Orientation, Sexual Orientation**


Homosexual men and women had significantly lower right hand 2D:4D ratios (even after controlling for handedness, height and weight differences) in comparison to heterosexuals.

**Finger Lengths and Erotic Role Preferences of Gay Men**

“Digit Ratios, Childhood Gender Role Behavior, and Erotic Role Preferences of Gay Men,” Matthew H. McIntyre, *Archives of Sexual Behavior*, vol. 32, no. 6, December 2003, pp. 495–7. The author, at Harvard University, explains:

Digit lengths were measured on photocopies from the most proximal crease to tip. All photocopies were then remeasured by a second rater.

Participants also completed items about their three most recent relationships or sexual encounters. Items included a general estimate of the frequency of their taking a “top” or “bottom” role in anal sex, their stated preference in that relationship, and the length of the relationship. In addition, subjects estimated their frequency of taking a top or bottom role in anal sex during masturbation fantasies. The variable used to describe “receptivity in anal intercourse” is the sum of the relative frequency of the bottom role in fantasies and in the three relationships averaged together.
Semen, Semen, Semen

“Are Body Fluctuating Asymmetry and the Ratio of 2nd to 4th Digit Length Reliable Predictors of Semen Quality?”, Renee C. Firman, Leigh W. Simmons, James M. Cummins and Phillip L. Matson, *Human Reproduction*, vol. 18, no. 4, 2003, pp. 808–12. The authors, at the University of Western Australia and at nearby institutions, report:

Comparison of our data with previous studies suggests that the putative relationship between semen quality and 2D:4D may have been driven by the inclusion of severely oligozoospermic men within the original subject group. Our sample included men with equally high 2D:4D ratios but who had normal semen. Thus, the 2D:4D ratio may not reliably indicate poor semen quality.

Boldfinger


The Aggressiveness of Unbalanced People


Many finger-related studies occupy their own categories. Here are some examples.

The Index-Finger Formula

“Size of External Genital Organs and Somatometric Parameters Among Physically Normal Men Younger Than 40 Years Old,” E. Spyropoulos, D. Borousas, S. Mavrikos, A. Dellis, M. Bourounis and S. Athanasiadis, *Urology*, vol. 60, no. 3, September 2002, p. 485. (Thanks to Kathleen O’Malley and Len Jaffe for bringing this to our attention.) The authors, who are at the Naval and Veterans Hospital of Athens, Greece, report that:

Fifty-two physically normal men, 19 to 38 years old, underwent tape measurements of penile dimensions in the flaccid-stretched state (total, shaft, glanular lengths), penile shaft volume calculation, and ultrasonographic testicular volume estimation. Age and somatometric parameters were not associated with the size of the genitalia, excluding the index finger length, which correlated significantly with the dimensions of the flaccid, maximally stretched, penis.

A Finger-fore Gone

“Biting Off More Than You Can Chew: A Forensic Case Report,” J.R. Drummond and G.S. McKay, *British Dental Journal*, November 13, 1999, p. 466. The authors, who are at the University of Dundee, explain:

A case is reported where a forefinger is ‘amputated’ by a human bite. This type of extreme biting injury is uncommon and probably represents tearing by the premolar teeth rather than a clean bite by incisor teeth.

The Midas Rough Touch
“Contamination by Human Fingers: The Midas Touch,” R. Gwozdz and F. Grass, *Journal of Radioanalytical and Nuclear Chemistry*, vol. 259, no. 1, 2004, pp. 173–6. (Thanks to Tom Gill for bringing this to our attention.) The authors, who are at Atominstiut der Österreichischen Universitäten, Vienna, Austria, explain that:

Wear and abrasion of various surfaces are constant processes in daily life, and commonly include interaction between human fingers and surfaces of every conceivable material. New methods for investigation of trace transfer processes by human fingers are described. Results of transfer for commonly used metals such as gold, silver, zinc, cadmium, tin, cobalt, nickel, chromium and iron are presented. Relationship between transfer of metals by touch and the general problem of purity in analytical activities is briefly discussed.

**Constipation Without Fingerprints**

“Childhood Constipation is Not Associated with Characteristic Fingerprint Patterns,” C.R. Jackson, B. Anderson and B. Jaffray, *Archives of Disease in Childhood*, vol. 88. 2003, pp. 1076–7. (Thanks to Scott A. Norton for bringing this to our attention.) The authors, who are at the University of Newcastle upon Tyne, UK, conclude that:

Fingerprint patterns are not associated with severe childhood constipation.

**Finger Licking While Paging Through the Clinical Chart**

“Pertinacious Habit on a Rehabilitation Unit: Repetitive Finger Licking While Paging Through the Clinical Chart,” M.M. LaBan, et al., *American Journal of Physical Medicine and Rehabilitation*, vol. 83, no. 1, 2004, pp. 75–8. (Thanks to Leigh Tooth for bringing this to our attention.) The authors, who are at William Beaumont Hospital, Royal Oak, Michigan, explain that:

A survey was performed to determine the frequency of unrecognized repetitive licking of fingers while reviewing hospital charts by various healthcare professionals who, by this habit, may be putting themselves at risk of acquiring a nosocomial infection.... Of the 50 healthcare professionals surveyed, five (10%) admitted to habitual repetitive licking of fingers while reviewing charts. In addition, 30 (60%) of those surveyed had observed other professionals doing so. Forty-seven (94%) acknowledged that they did not routinely wash their hands after reviewing the charts, potentially placing themselves at risk of acquiring a nosocomial infection. As an immediate consequence of this study, staff members have been encouraged to wash their hands before and after reviewing a patient’s chart.
Spectroscopic Discrimination of Shit from Shinola

by Thomas H. Painter, National Snow and Ice Data Center (NSIDC), Center for the Study of Earth from Space (CSES), University of Colorado at Boulder, USA
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Jason Brazile, Remote Sensing Laboratories, Department of Geography, University of Zurich, Switzerland

We conducted an experiment to determine whether people can tell shit from Shinola.

Shinola is a brand of shoe polish once manufactured in the United States. Today we care about Shinola only because it is part of the slang expression “doesn’t know shit from Shinola,” meaning “is completely ignorant.” Shinola is posited for comparison with shit because the two substances have a similar dark brown color and smeary consistency.

The expression now has a special degree of irony. Most people truly do not know shit from Shinola—because they have never heard of Shinola.

Measurements

The spectral reflectance measurements over Shinola and shit were made in the personal laboratory space of the lead author. Samples of Shinola and shit were sampled and exposed as follows.

The shit: The shit sample was obtained from a female dog of age 3.5 years in Boulder, Colorado. The dog enjoys typical nutrition for its breed and dwelling place, and weighs 20.4 kilograms. The sample was best described as a typical “well formed stool” that features a medium consistency, brown color, and typical smell. Its temperature at time of examination was the ambient temperature of 18°C. Moisture was not sampled.

The Shinola: The sampled Shinola (“Cordovan” color) was from a pre-1940s, 19 gram cylindrical aluminum container that had been unused prior to this examination.

We used an Analytical Spectral Devices FR (www.asdi.com) field spectroradiometer to measure the hemispherical-directional reflectance factor (HDRF) at nadir of both targets using standard techniques. In Figures 1a and 1b, we show the experimental setup for measurements over Shinola and shit.

Final data processing was performed using a polishing method that was designed to be used in the spectral domain. “Spectral polishing” is a term to describe a mathematical renormalization method for removing artifacts from reflectance spectra using only the data itself. It has nothing to do with the function of Shinola.

Results

The HDRF of the shit sample was spatially heterogeneous primarily due to topographic, rather than compositional, differences. The spectral standard deviation had a mean, minimum, and maximum across the spectrum of 2.5 x 10^{-2}, 9.0 x 10^{-3}, and 7.0 x 10^{-2}, respectively in reflectance. The HDRF of Cordovan (brown) Shinola were spatially homogeneous across the smooth surface of the sample (see Figure 2a). The spectral standard deviation had a mean, minimum, and
maximum across the spectrum of $2.0 \times 10^{-3}$, $2.9 \times 10^{-4}$, and $1.0 \times 10^{-2}$ (excluding the water vapor absorption at $\lambda \sim 1.9 \, \mu m$), respectively in reflectance.

At this point, we get down to finally observationally knowing shit from Shinola. The spectral HDRF of shit exhibits strong absorption in the visible wavelengths (resulting in human visual detection that the shit is brown) and peak reflectance in the wavelength span $1.0 \leq \lambda \leq 1.3 \, \mu m$ (see Figure 2b). The spectral HDRF of Shinola likewise exhibits strong absorption in the visible wavelengths (again we see it is brown but not that it is necessarily different from shit) but peak reflectance in the broader wavelength range $1.0 \leq \lambda \leq 1.6 \, \mu m$. Figure 3 shows the comparative HRDF of shit and of Shinola.

A more precise knowledge of shit from Shinola would come from spectroscopic analysis of constituent absorption. Shit has local absorption features at $1.19 \, \mu m$ and $1.47 \, \mu m$, whereas Shinola has local absorption features at $1.21 \, \mu m$, $1.41 \, \mu m$, and $1.73 \, \mu m$. The slope of the HDRF of shit is positive from $2.1$ to $2.23 \, \mu m$ whereas that of Shinola is negative.

Therefore, it is evident that to the human eye, shit and Shinola are inseparable given similar morphology, whereas with near-infrared spectroscopy shit is easily known from Shinola. The work presented here contributes the first documented methodology for knowing shit from Shinola and also the first that can do so in near real-time.

**Figure 2a.** Measurements of hemispherical-directional reflectance factor (HDRF) of Shinola. The solar zenith angle at time of acquisition was $33^\circ$ with cloud-free skies.

**Figure 2b.** Measurements of hemispherical-directional reflectance factor (HDRF) of dog shit.

**Figure 3: Spectral polished results for Shinola and shit.**

**Dedication**

This work is devoted to the memory of C. Walter Rosenthal.

**References**


Decades ago, many murder mystery novels and movies took place in museums. A June 21, 2007 report in the *Washington Post* heralds a return of the museum as a place of skulduggery and, if we the public are lucky, murder. Under the leadership of its recently deposed director, the Smithsonian Institution reportedly fostered a good, old-fashioned climate of secrecy and impending doom. Here’s a snippet from that report:

**Secrecy Pervaded Smithsonian on Small’s Watch**

Leaders of the Smithsonian in the past seven years took extraordinary steps to keep secret the amount of top executives’ compensation, lavish expense-account spending, ethical missteps and management failures, an independent report released yesterday shows. Former secretary Lawrence M. Small, with the help of his top deputy, Sheila P. Burke, took advantage of a vast gap in oversight to set his own salary, spend freely, take unlimited leave and ignore policy to pursue private agendas, according to the independent review committee...

Three cheers for former secretary Small! Maybe, just maybe, through force of personality, he has ushered in a new era of gripping, old-fashioned creepy museum murder mysteries.

(Note: To learn more about gripping, old-fashioned creepy museum murder mysteries, see “The Curious Deaths of Movie Museum Curators,” *AIR* vol. 6, no. 3, May/June 1999.)

**The Juicy Report**

The report mentioned in the newspaper report was prepared by a special Smithsonian Institution Independent Review Committee (see Figure 2). On June 18, 2007 it was submitted to the Smithsonian Institution’s Board of Regents. Even a single page from the table of contents (see Figure 3) provides sufficient juicy material for any competent scriptwriter who wants to construct a new creepy museum murder mystery. Portions of the report are shown here.
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Figure 3. A page from the report’s table of contents. It is chock full of mysterious, perhaps murderous material.
Historically, compensation for the Smithsonian Secretary was generally conservative. As Chart 4 shows, from the mid 1980’s through the hiring of Secretary Small in 2000, the base salary of the Secretary increased at a relatively modest pace. Secretary Robert M. Adams was

A portion of one page of the report.

Yet another popular murder mystery.

Another popular murder mystery.

Still another popular murder mystery.
Digital Incarceration: The Finger Pillory

by S. Drew, Improbable Research staff

The finger pillory is a simple device for restraining the finger—and thus the body—of someone who has been fingered as being a miscreant.

The drawing and description shown here (see Figure 1) are from the book *The Archeological Album; or Museum of National Antiquities*, edited by Thomas Wright, illustrated by F.W. Fairholt, London, Chapman and Hall, 1845.

An item in the October 25, 1851 issue of *Notes and Queries* describes a finger pillory in the Church of Ashby-de-la-Zouch. Thomas Lawrence, the author of that note (see Figure 2), says:

Its use is stated to have been for the punishment of persons guilty of mal-practices during divine service; truly, a mischievous urchin, or a lout of a farm servant, dragged off to the stocks, must have been a scene extremely edifying to the congregation, particularly if the offenders were obstreperous, and had no inclination whatever to be in a fix.

Figure 1.

Figure 2.
**AIR Teachers’ Guide**

Three out of five teachers agree: curiosity is a dangerous thing, especially in students. If you are one of the other two teachers, AIR and mini-AIR can be powerful tools. Choose your favorite hAIR-raising article and give copies to your students. The approach is simple. The scientist thinks that he (or she, or whatever), of all people, has discovered something about how the universe behaves. So:

- Is this scientist right -- and what does “right” mean, anyway?
- Can you think of even one different explanation that works as well or better?
- Did the test really, really, truly, unquestionably, completely test what the author thought he was testing?
- Is the scientist ruthlessly honest with himself about how well his idea explains everything, or could he be suffering from wishful thinking?
- Some people might say this is foolish. Should you take their word for it?
- Other people might say this is absolutely correct and important. Should you take their word for it?

*Kids are naturally good scientists. Help them stay that way.*

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**HMO-NO News**

Health care advice to pass on to your patients

**Do You Smell?**

Reviving an age-old medical tradition, we now use our noses to identify medical conditions in our patients.* If you smell, we will know about it, and we will use the information to decide whether and how to offer you treatment.** It’s just one more way that HMO-NO takes care of you and your family’s medical needs, wants and desires.

* Note: Biomedical odorant identification services may incur additional fees.
** Note: Diagnostic tests done in lieu of biomedical odorant identification may incur additional fees.
Race for a Little Definition

“Should the Definition of Micropenis Vary According to Ethnicity?” Pik Shun Cheng and Jean-Pierre Chanoine, *Hormone Research*, vol. 55, no. 6, 2001, pp. 278–81. *(Thanks to Len Finegold for bringing this to ur attention.)*

The authors, who are at University of British Columbia, explain how they explored the question:

We determined whether the existing reference values for the diagnosis of micropenis are appropriate for optimal care of neonates in a multiethnic environment like Vancouver. Methods: The stretched penile length and width were measured in 105 full-term newborn males of Caucasian, Chinese, and East-Indian origin.

Naming the Vestibule

“The Vaginal Vestibule,” M. Friedman, E. Siegler and L. Löwenstein, *Journal of Lower Genital Tract Disease*, vol. 8, no. 1, January 2004, pp. 71–2. The authors, at Rambam Medical Center in Haifa, Israel, report:

Vulvar vestibule is a common term in the medical nomenclature. In our view, this term is inaccurate.

RESULTS: Our research proves that the term vulvar vestibule does injustice to the area it describes.

CONCLUSIONS: The correct term for vulvar vestibule actually is vaginal vestibule.

Sweet Orchidometer

“An Inexpensive and Edible Aid for the Diagnosis of Puberty in the Male: Multispecies Evaluation of an Alternative Orchidometer,” Poonam Bhalla, Sally Pippa and Gareth Williams, *British Medical Journal*, vol. 323, December 22–29, 2001, p. 1486. *(Thanks to Richard Wassersug for bringing this to our attention.)* The authors, at University Hospital in Aintree, Liverpool, report:

Deeply concerned by the national shortage of orchidometers, two of us (PB and GW) made a serendipitous discovery that led to this study. Briefly, Teasers and Truffle, two chocolates in the Celebrations assortment (Mars UK, Slough), are uncannily similar in size and shape to the 8 millimetre orchidometer bead.

Something New, Not Under the Sun

Bends on the Learning Curve

Improbable ideas and explanations collected from classrooms

by Richard Lederer

Medical transcriptions sometimes deal with family affairs. Here are some examples:

- She stated that she had been constipated for most of her life, until she got a divorce.
- Her mother looked at her ears today and brings them in today to be checked.
- The patient states that diarrhea tends to run in his family.
- The patient is not terribly willing to discuss his constipation in front of his mother, but after she leaves he softens up a bit and talks.

Please send your best specimens, together with sources whenever possible, to Richard Lederer, 10034 Mesa Madera Drive, San Diego, CA 92131 USA

Signed Books by Richard Lederer

(circle choices)

- PRESIDENTIAL TRIVIA (fascinating facts about U.S. presidents) $11
- WORD WIZARD (the best of Richard Lederer) $14.00
- ANGUISHED ENGLISH (bloopers) $7.50
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