MODERN HUMAN ANATOMY

LIST OF DRAFT FIGURES AND VIDEOS

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Initial Figure View of bottom sole from an **Adidas Feet You Wear** concept advertisement/ promotional material.

Figure 1A Identical bare footprints of always barefoot European and Solomon Island native from **James**, Clifford S. (1939). Footprints and feet of natives of the Solomon Islands. In the ***Lancet***: 2: 1390-1393.

Figure 1B Different bare footprints of shoe-wearing European and barefoot Solomon Island native from **James**, Clifford S. (1939) above.

Figure 2A&B Figure 2B is Elevated shoe heel elevating the wearer's foot heel and thereby plantarflexing the ankle joint, based on Figure 290 of the classic 1918 Edition of Henry *Gray's Anatomy of the Human Body*, available online at www.Bartleby.com/107/. Fig. 2A is from unknown web source.

Figure 3A-C The ankle joint and subtalar ankle joint of the foot, based on Figures 268 and 271 of the 1918 Edition of *Gray's Anatomy.*

Figure 4A&B Based on Figure 290 of the 1918 Edition of *Gray's Anatomy* and adapted from Hicks, J.H. (1961) The three weight-bearing mechanisms of the foot. In: Evans, F.G., ed. Biomechanical Studies of the Musculo-Skeletal System. Springfield, IL: Charles C. Thomas. From Kelikian, Armen (2011). *Sarafian's Anatomy of the Foot and Ankle*, page 620. Philadelphia: Wolters Kluwer.

Figure 5A Based on Figures 16 and 20, pages 61 and 67, from Sgarlatto, T. E. (Ed.) (1971). *A Compendium of Podiatric Biomechanics*. San Francisco: California College of Podiatric Medicine.

Figure 5B Figures 1 and 2 of Gustav Rubin (1971). Tibial Rotation. *Bulletin of Prosthetic Research*. Spring, 1971.

Figure 6A&B Comparison between barefoot and heeled shoe of the path of the ankle joint (talar trochlear) when rotated externally to the outside by shoe heel-induced supination of the subtalar joint, based on Figures 244 and 258 of the 1918 Edition of *Gray's Anatomy.*

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Figure 8B Simple graph of the force vectors of Fig. 8A.

Figure 8C Knee Moment Frontal Plane & Transverse Plane Graphs from Figure 4 of Steffen **Willwacher** et al. (2016). The free moment in running and its relation to joint loading and injury risk. In *Footwear Science* Vol. 8, No. 1, 1-11. Winner of the Nike Award for Athletic Footwear Research presented at the XIIth Footwear Biomechanics Symposium in Liverpool, UK 2015.

Figure 8D Figure 9, page 1850, from Stefanyshyn, Darren J. et al. (2006). Knee Angular Impulse as a Predictor of Patellofemoral Pain in Runners. In *The American Journal of Sports Medicine* 34: 11: 1844-1851.

Figure 8E Figure 2, page 481, from Mundermann, Dyrby, Chris O., and Andriacchi, Thomas P. (2008). A comparison of measuring mechanical axis alignment using three-dimensional position capture with skin markers and radiographic measurements in patients with bilateral medial compartment knee osteoarthritis. In *The Knee*. 15:480-485.

Figure 9A&B Comparative views of the European and Australian Aborigine tibial plateaus (lower surface of the knee joint) from W. Quarry Wood (1920). The Tibia of the Australian Aborigine. In the *Journal of Anatomy* Vol. LIV: Parts II & III (January and April): 232-257, Figure 1 on page 235.

Figure 9C&D Comparative upper surfaces of the talus (ankle joint) of an Egyptian and a European, Figure 61, page 114, of Jones, Frederic Wood (1949). *Structure and Function as Seen in the Foot*. London: Bailliere, Tindall and Cox.

Figure 9E Cone-shaped trochear surface of modern ankle joint, modified from a upper view of the talus in the 1918 Edition of *Gray's Anatomy.*

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Figure 16B Pelvic openings in selected primate species including human, Figure 5-2, page 93, from Trevathan, Wenda (2010). *Ancient Bodies, Modern Lives*. Oxford: University Press.

Figure 16C Four main types of pelvises, from Figure 24, page 75, of Francis, Carl C. (1952). *The Human Pelvis.* St. Louis: The C. V. Mosby Company.

Figure 16D Fetus during labor, from figure by William Smellie (1754) *A Sett of Anatomical Tables*, from page 203, in *Human Anatomy: A Visual History from the Renaissance to the Digital Age, page 203.* (2006) Rifkin, Benjamin A. and Ackerman, Michael J. New York: Abrams.

Figure 16E Typical asymmetrical prenatal position of human fetus in the womb, right ear facing outward, from Figure 4.36, page 158, of Gazzaniga, Michael S. et al. (2014). *Cognitive Neuroscience: The Biology of the Mind* (4th Ed.). New York: W. W. Norton & Company.

Figure 16F Pelvis as a basin for viscera, from figure by Giulio Cesare Casseri (1627) De humani corporis favrica libri decem. Page 118 in *Human Anatomy: A visual History from the Renaissance to the Digital Age, page 135.* (2006) Rifkin, Benjamin A. and Ackerman, Michael J. New York: Abrams.

Figure 16G Viscera spilling out, unsupported by pelvic basin, Plate 57 of Andreas Vesalius from the First Edition of the *De Humani Corporis Fabrica* (1543), page 165 of *The Illustrations from the Works of Andreas Vesalius of Brussels* by Saunders, J. B. deC. M. and O'Malley, Charles D. (1950) New York: Dover Publications, Inc.

Figure 17A Plate 23 Man Running, Frame 4 rear view at midstance, from Muybridge, Eadweard (1887). *The Human Figure in Motion*. New York: Dover Publications, Inc. (1955).

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Figure 17C Composite of previous Frames 4 and 10 above with pelvis leveled in order to show the true relative position of the flexed legs at the maximum weight-bearing load in the midstance position.

Figure 17D Rear view of a Bushman running barefoot from a **YouTube** video clip of *Barefoot running Bushman versus me (shod Finn)* https://www.youtube.com/watch?v=H1Ej2Qxv0W8. Published on May 26, 2013.

Figure 17E Front view of Kenenisa Bekele of Ethiopia is shown finishing the second fastest marathon in history (2 hours, 3 minutes, 3 seconds).

Figure 18A Hip Adduction Deformity from Figure 440 from Samuel L Turek, *Orthopaedics: Principles and Their Application*. Philadelphia: J. B. Lippincott Company, 1967.

Figure 18B Corresponding still photos of left and right legs at midstance of woman walking in high heels, from a video clip of a Depend advertisement from September 2016.

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Smillie (1974) of preceding figure reference.

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Figure 25 1960's Limbo King Mike Quashie, in *The New York Times* (March 13, 2010) page A13.

Figure 26A Neck torsion and skull positions, Figures 64 and 65, page 219, from Kapandji, I. A. (1974). T*he Physiology of the Joints (Volume 3): The Trunk and Vertebral Column (Second Edition)*. Edinburgh: Churchill Livingstone.

Figure 26B Jim Ryun's head and neck position at the end of a race. Ryun's Run. In *Runner's World,* September 2003, page 79.

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Figure 27A Five still frames (three right and two left, all at the midstance position) from a front view video clip of Usain Bolt's head while running in a Gatorade advertisement.

Figure 27B An Xray example of typical cervical vertebrae asymmetry from unknown web source.

Figure 27C Side view of the eye muscles, from Figure 885 in the classic 1918 Edition of Henry *Gray's Anatomy of the Human Body.*

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Figure 28B Foville's drawing of a top view of the human brain (1844). From **Sandrig**, Susan (2016). A brief history of topographical anatomy. In ***Journal of Anatomy*** 229: 32-62, **Figure 10** on page **56**. Plate 11 in Achille Louis Foville's Atlas published with ***Traite complet de l'anatomie, de la physiologie et de la pathologie du system nerveux cerebro-spinal*** (1844), from the President and Council of the Royal College of Surgeons of England.

Figure 28C Christopher Wren's drawing of the base of the human brain, the first figure of Thomas Willis' ***Cerebri anatome*** (1664), from the President and Council of the Royal College of Surgeons of England. From **Sandrig**, Susan (2016). A brief history of topographical anatomy. In ***Journal of Anatomy*** 229: 32-62, **Figure 7** on page **44**. **Arraez-Aybar**, Luis-Alfonso et al. (2015). Thomas Willis, a pioneer in translational research in anatomy (on the 350th anniversary of ***Cerebri anatome***), **Figure 3** on page **295**. In ***Journal of Anatomy*** 226: 289-300. Available on https://archive.org/stream/cerebrianatomecu00will#page/n71/mode/2up.

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Figure 29A The asymmetrically twisted body of wheel-chair-bound Steven Hawking from **Hawking** (2014), a PBS biography of his life.

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Figure 31 Photo of frontal plane cross-section of a normal human brain showing the corpus callosum (circled in red), the physical portion of the brain that provides a fiber bundle connecting the two hemispheres.

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