This information is with regards to the discussion today. The video: "Segregated by Design" is based on the book **The Color of Law: A Forgotten History of How our Government Segregated America** by Richard Rothstein. The video you saw is the only production at this moment. for more information visit: segregatedbydesign.com.

For more information about Johan Friederick Bluemenbach
visit: https://en.wikipedia.org/wiki/Johann_Friedrich_Blumenbach

Racial anthropology
Further information:
Blumenbach's five races. (Source: Wikipedia)
Blumenbach's work included his description of sixty human crania (skulls) published originally in fascicules as Decas craniorum (Göttingen, 1790–1828). This was a founding work for other scientists in the field of craniometry. He divided the human species into five races in 1779, later founded on crania research (description of human skulls), and called them (1793/1795):

the Caucasian or white race. Blumenbach was the first to use this term for people of European, Middle Eastern, and North African origin.
the Mongolian or yellow race, including all East Asians and some Central Asians.
the Malayan or brown race, including Southeast Asian and Pacific Islanders.
the Ethiopian or black race, including sub-Saharan Africans.
the American or red race, including American Indians.

Further anatomical study led him to the conclusion that 'individual Africans differ as much, or even more, from other Africans as from Europeans'.

Blumenbach argued that physical characteristics like skin color, cranial profile, etc., depended on geography, diet, and mannerism.

Like other monogenists such as Georges-Louis Leclerc, Comte de Buffon, Blumenbach held to the "degenerative hypothesis" of racial origins. Blumenbach claimed that Adam and Eve were Caucasian inhabitants of Asia (see Asia hypothesis), and that other races came about by degeneration from environmental factors such as the sun and poor diet. Thus, he claimed, Negroid pigmentation arose because of the result of the heat of the tropical sun, while the cold wind caused the tawny colour of the Eskimos, and the Chinese were fair-skinned compared to the other Asian stocks because they kept mostly in towns protected from environmental factors. He believed that the degeneration could be reversed in a proper environmental control and that all contemporary forms of man could revert to the original Caucasian race.

Moreover, he concluded that Africans were not inferior to the rest of mankind 'concerning healthy faculties of understanding, excellent natural talents and mental capacities' [Jack Hitt, "Mighty White of You: Racial Preferences Color America's Oldest Skulls and Bones," Harper's, July 2005, pp. 39–55], and wrote the following:

Finally, I am of opinion that after all these numerous instances I have brought together of negroes of capacity, it would not be difficult to mention entire well-known provinces of Europe, from out of which you would not easily expect to obtain off-hand such good authors, poets, philosophers, and correspondents of the Paris Academy; and on the other hand, there is no so-called savage nation known under the sun which has so much distinguished itself by such examples of perfectibility and original capacity for scientific culture, and thereby attached itself so closely to the most civilized nations of the earth, as the Negro.[Anthropological Treatises of Blumenbach and Hunter, pg. 312].

He did not consider his "degenerative hypothesis" as racist and sharply criticized Christoph Meiners, an early practitioner of scientific racialism, as well as Samuel Thomas von Sömmerring, who concluded from autopsies that Africans were an inferior race. Blumenbach wrote three other essays stating non-white peoples were capable of excelling in arts and sciences in reaction against racialists of his time.[Emmanuel Chukwudi Eze Race and the enlightenment: a reader, Blackwell (1997) p. 79]

These ideas were far less influential. His ideas were adopted by other researchers who used them to encourage scientific racism.[Fredrickson, George M. Racism: A Short History, p. 57, Princeton University Press (2002)]

Printing and the Mind of Man says that "Blumenbach [developed] the thesis that all living races are varieties of a single species ... Blumenbach was opposed to the practice of slavery and the then current belief in the inherent savagery of the coloured races". (Carter J & Muir P.H. 1983. Printing and the Mind of Man. 2nd ed, Karl Pressler, Munchen, p132/3).

These are the books I mentioned from Professor James W. Loewen (especially those in bold):
The Mississippi Chinese: Between Black and White, Cambridge: Harvard University Press, 1971; second edition, Prospect Heights, IL: Waveland Press 1988.
(1999). **Lies Across America: What Our Historic Markers and Monuments Get Wrong**. New York: The New Press.
(2005). **Sundown Towns**. New York: The New Press.
(2007). **Lies My Teacher Told Me: Everything Your High School History Textbook Got Wrong**. New York: The New Press.
(2010). The Confederate and Neo-Confederate Reader: The "Great Truth" about the "Lost Cause". Jackson, Mississippi: University Press of Mississippi.
Loewen, James W.; Stefoff, Rebecca. (2019). Lies My Teacher Told Me: Young Readers' Edition. New York: The New Press.

As well as the article attached.

Rev. Dr. Eliezer Valentín-Castañón

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Johann Friedrich Blumenbach (1752-1840) [1]

By: MacCord, Kate Keywords: Bildungstrieb [2]

In eighteenth century Germany, Johann Friedrich Blumenbach studied how individuals within a species vary, and to explain such variations, he proposed that a force operates on organisms as they develop. Blumenbach used metrical methods to study the history of humans [3], but he was also a natural historian and theorist. Blumenbach argued for theories of the transformation of species, or the claim that new species can develop from existing forms. His theory of *Bildungstrieb* (formative drive [4]), a developmental force within all organisms, influenced the conceptual debates among many late nineteenth and early twentieth century embryologists and naturalists.

Blumenbach was born 11 May 1752 in Gotha, Germany. His mother, Charlotte Eleonore Hedwig Buddeus, was the daughter of a high-ranking official in Gotha's government. Blumenbach's father, Heinrich Blumenbach, was the assistant headmaster at the local gymnasium, or primary school. Blumenbach completed his early education in Gotha, graduating from the gymnasium in 1769. After graduation, he attended the University of Jena [5], in Jena, Germany, before moving to the University of Göttingen, in Göttingen, Germany. While a student at the University of Göttingen, Blumenbach studied with naturalist Christian W. Büttner. Büttner taught Blumenbach via his lectures on exotic cultures and peoples, and he encouraged Blumenbach to write his dissertation on such communities.

In 1775 Blumenbach received his medical degree from the University of Göttingen after completing his dissertation, "De Generis Humani Varietate Native Liber" ("On the Natural Varieties of Mankind"). This text showed that the variations that exist in the human form do not represent differences between human species. In his dissertation, he also introduced the term Caucasian as a term for white Europeans. Blumenbach's dissertation is an early demonstration of comparative anatomy to objectively study human history. While earlier scholars, like Georges-Louis Leclerc [6], Comte de Buffon, in France, had created classifications of humans [3], they based their works largely on subjective behavioral characteristics and cultural biases. Blumenbach argued that there are five distinct races of mankind within a single species, a conclusion he derived from detailed studies of skulls and human anatomy. Although Blumenbach recognized distinct races, he also believed in the unity of the human species, and he combated the use of anthropology as a means to promote discrimination.

Following the publication of his dissertation, Blumenbach became curator of thenatural history [7] collection at the University of Göttingen. In 1778 he became a professor of medicine and married the daughter of an administrator at the university. The following year, Blumenbach published *Handbuch der Naturgeschichte* (*Handbook of Natural History*), in which he evaluated morphological and ecological evidence from which he created a system to classify organisms. Blumenbach believed that the Linnaean system of classification, developed by Carl Linnaeus in the 1735 text *Systema Naturae*, published while Linnaeus was in the Netherlands, defined species on the basis of single, often arbitrarily chosen, characteristics, a practice that many thought produced artificial groups that did not accurately reflect nature. Blumenbach hoped to correct these supposed problems with the Linnaean system by defining species based on a series of morphological characters, which he presented in his *Handbuch*. He also recognized the potential for species to change through time or to become extinct. Blumenbach later expanded on these topics in his *Beiträge zur Naturgeschichte* (*Contributions to Natural History*), in which he further investigated individual variability and the possibility that the Earth had a long history.

In 1780 Blumenbach presented his concept of *Bildungstrieb*, or the formative force, an idea that influenced many in an embryological debate of his time and that affected developmental research and natural philosophy for more than a century. In his paper, "*Über den Bildungstrieb (Nisus Formativus) und Seinen Einfluss auf die Generation und Reproduktion*" ("On the Formative Force and its Influence on Generation and Reproduction") Blumenbach described *Bildungstrieb* as a force within all organisms that operated on their bodies throughout development in order to give rise to their final forms.

Blumenbach's *Bildungstrieb* concept influenced the debate between preformationists and epigenesists, as it attacked the assumptions underlying preformationism. According to preformationism, an organism existed fully formed within the egg [8] or sperm [9] (germ cell), and the process of development was one of the animal unfolding, or growing, from its miniature germinal form to more mature and adult forms. Many scholars, such as Albrecht von Haller [10], in Switzerland, Marcello Malpighi, in Italy, and Jan Swammerdam [11], in the Netherlands, believed that some form of preformationism best explained development. On the other hand, according to epigenesis [12], each embryo generated anew by gradually developing from unorganized materials, a theory supported by the Caspar Friedrich Wolff [13], in Russia. Previous authors, such as Wolff, had offered notions similar to *Bildungstrieb*, of vital forces that shaped the body. However, Blumenbach's concept went beyond those offered by other scholars, as it reinforced the arguments for epigenesis [12]. He provided a framework for understanding a force for development that was both teleological, in that it acted towards a final form, and constitutive, in that it could organize development.

Blumenbach applied his *Bildungstrieb* concept in his following works and various scholars utilized his concept. In the second

edition of *On the Natural Varieties of Mankind* Blumenbach used *Bildungstrieb* to explain the degeneration of an original type of human into the five varieties—which he later classified as Caucasian, Mongolian, Malayan, Ethiopian, and American—found around the world. In *Contributions to Natural History*, published in 1790, Blumenbach described how *Bildungstrieb* operated after the Biblical flood to produce new species. The concept was adopted by the writer and natural philosopher Johann Wolfgang von Goethe in Germany, and the philosopher Immanuel Kant in Prussia. Nearly one hundred years after Blumenbach's formulation of the concept, Ernst Haeckel [14], the chair of zoology at the University of Jena [5], employed *Bildungstrieb* as the foundation of his theories on individual development—theories which influenced embryological research well into the twentieth century.

Blumenbach participated in more than seventy academies and scientific organizations, and he continued to teach at the University of Göttingen during his later years. His textbook, *Handbuch der Vergleichenden Anatomie* (*Handbook of Comparative Anatomy*), published in 1805, influenced many throughout the history of comparative anatomy. In 1816 Blumenbach earned the appointment *professor primarius* of the Faculty of Medicine. Throughout his tenure at Göttingen, Blumenbach taught many students, such as the naturalist Alexander von Humboldt, and the early proponent of recapitulation theory [15], Carl Friedrich Kielmeyer. An active naturalist throughout life, Blumenbach was among the first to describe the wooly mammoth, *Mammuthus primigenius* [16], and he helped name the platypus, *Ornithorhynchus anatinus* [17]. He helped turn the natural history [7] collection at the University of Göttingen into one of the first anthropological museums in the world, as he amassed and catalogued skulls, hair, skins, casts, and pictures from places around the world. When Blumenbach was appointed curator in 1776, the collection housed 85 skulls; when he died on 22 January 1840, the collection had grown to 245 skulls with detailed accounts of their origin. Blumenbach's skull collection, including the skulls that formed the basis of his dissertation and his theory of the five varieties of human, persisted at the University of Göttingen into the twenty-first century.

Sources

1. Barber, Kenneth. "Johann Friedrich Blumenbach." In *Science and its Times*, eds. Neil Schlager and Josh Lauer, 151–2. Detroit: Gale, 2000.
2. Barber, Kenneth. "Johann Blumenbach and the Classification of Human Races." In *Science and its Times*, eds. Neil Schlager and Josh Lauer, 105–8. Detroit: Gale, 2000.
3. Baron, Walter. "Blumenbach, Johann Friedrich." *Complete Dictionary of Scientific Biography* 2 (2008): 203–05.
4. Blumenbach, Johann Friedrich. "De Generis Humani Varietate Native Liber" [On the Natural Varieties of Mankind], 1775. In *The Anthropological Treatises of Johann Friedrich Blumenbach and the Inaugural Dissertation of John Hunter* [18], ed. and trans. Thomas Bendyshe, 65–144. London: Logman, Green, Longman, Robers, & Green, 1865. http://dx.doi.org/10.5962/bhl.title.50868 [19] (Accessed October 3, 2012).
5. Blumenbach, Johann Friedrich. *Handbuch der Naturgeschichte* [Handbook of Natural History]. Göttingen: Johann Christian Dieterich, 1779. http://dx.doi.org/10.5962/bhl.title.37039 [20] (Accessed October 3, 2012).
6. Blumenbach, Johann Friedrich. "Über den Bildungstrieb (Nisus formativus) und seinen Einfluss auf die Generation und Reproduktion" [On the Formative Force and its Influence on Generation and Reproduction]. *Göttingisches Magazin der Wissenschaften und Literatur* 1 (1780): 247–66. http://www.ub.uni-bielefeld.de/cgi-bin/navbutton.cgi?ptad=/diglib/aufkl/goettmag/1348028&seite=00000255.TIF [21] (Accessed January 14, 2014).
7. Blumenbach, Johann Friedrich. "Beiträge zur Naturgeschichte" [Contributions to Natural History], 1790. In *The Anthropological Treatises of Johann Friedrich Blumenbach and the Inaugural Dissertation of John Hunter* [18], ed. and trans. Thomas Bendyshe, 277–340. London: Logman, Green, Longman, Robers, & Green, 1865. http://dx.doi.org/10.5962/bhl.title.50868 [19] (Accessed October 3, 2012).
8. Blumenbach, Johann Friedrich. *Handbuch der Vergleichenden Anatomie* [Handbook of Comparative Anatomy]. Göttingen: H. Dieterich, 1805. http://dx.doi.org/10.5962/bhl.title.49162 [22] (Accessed January 14, 2014).
9. Buffon, Georges Louis Leclerc, comte de. *Histoire Naturelle Générale et Particulière* [Natural History, General and Particular]. Paris: de l'imprimerie Royale, 1804. http://dx.doi.org/10.5962/bhl.title.12463 [23] (Accessed October 22, 2012)
10. Goethe, Johann Wolfgang von. *Gedichte*. Leipzig [24]: J.G. Cotta, 1868. http://archive.org/stream/goethesgedichte03goetgoog#page/n5/mode/2up [25] (Accessed January 14, 2014).
11. Haeckel, Ernst. "Die Gastraea-Theorie, die phylogenetische Classification des Thierreichs und die Homologie der Keimblatter" [The Gastraea Theory, the Phylogenetic Classification of the Animal Kingdom and the Homology [26] of the Germ Layers]. In *Jenaische Zeitschrift fur Naturwissenschaft*, 8 (1874): 1–55. http://www.biodiversitylibrary.org/title/8428#page/11/mode/1up [27] (Accessed November 30, 2013).
12. Hall, Brian Keith. "The Paradoxical Platypus." *BioScience* 49 (1999): 211–18.
13. von Haller, Albrecht. *Elementa physiologiae corporis humani* [Elements of Human Physiology]. Lausanne: Sumptibus M.M. Bousquet et Sociorum, 1757. http://archive.org/stream/elementaphysiolo01hall#page/n7/mode/2up [28]
14. Humboldt, Alexander von. *Ansichten der Natur, mit wissenschaftlichen Erläuterungen* [Aspects of Nature, in Different Lands and Different Climates]. Stuttgart: J.G. Cotta, 1849. http://dx.doi.org/10.5962/bhl.title.64638 [29] (Accessed January 14, 2014). Translated by M. Sabine as *Aspects of Nature*. London: Longman, Brown, Green, and Longmans, 1849. http://dx.doi.org/10.5962/bhl.title.45601 [30] (Accessed January 14, 2014).
15. Kant, Immanuel. *Kritik der Urtelskraft* [Critique of The Power of Judgement]. Berlin: Legard and Friedrich, 1790. https://archive.org/details/kritikderurteils00kantuoft [31] (Accessed January 14, 2013). Translated by J.H. Bernard as *Kant's*

Critique of Judgement. London: St. Martins, 1914. https://archive.org/details/kantscritiqueof00kantuoft [32] (Accessed January 14, 2014).
16. Keith, Arthur. "Blumenbach's Centenary." *Man* 40 (1940): 82–85.
17. Kielmeyer, Carl Friedrich. *Ueber die Verhältnisse der organischen Kräfte untereinander in der Reihe der verschiedenen Organisationen, die Gesetze und Folgen dieser Verhältnisse* [On the Relations of the Organic Forces in the Series of the Different Organizations, the Laws and Consequences of these Conditions]. Stuttgart: Academischen Buchdrukerei, 1793.
18. Lenoir, Timothy. "Kant, Blumenbach, and Vital Materialism in German Biology." *Isis* 71 (1980) 77–108.
19. Linnaeus, Carl. *Systema Naturae* [System of Nature], 12th edition. Holmiae: Laurentii Salvii, 1766–68. http://dx.doi.org/10.5962/bhl.title.68927 [33] (Accessed January 14, 2014).
20. Malpighi, Marcello. *Dissertatio Epistolica de Formatione Pulli in Ovo* [On the Formation of the Chick in the Egg]. London: J Martyn, 1673. http://shinku.nichibun.ac.jp/NOMA/new/books/11/suema000000003gu.html [34] (Accessed January 14, 2014).
21. Oppenheimer, Jane. "Ernst Haeckel [14] as an Intermediary in the Transmutation of an Idea." *Proceedings of the American Philosophical Society* [35] 126 (1982): 347–55.
22. Richards, Robert. "Kant and Blumenbach on the *Bildungstrieb*: A Historical Misunderstanding." *Studies in the History and Philosophy of Biology and Biomedical Sciences* 31 (2000): 11–32.
23. Roe, Shirley. *Matter, Life, and Generation: 18th-Century Embryology and the Haller-Wolff Debate* Cambridge: Cambridge University [36] Press, 1981.
24. Swammerdam, Jan. *Miraculum naturae sive uteri muliebris fabrica* [A miracle of nature or the structure of the female uterus [37]]. Leiden: Severinum Matthaei, 1672 https://archive.org/details/joharrisswammer00swamgoog [38] (Accessed January 14, 2014).
25. Wolff, Caspar Friedrich. *Theoria Generationis* [39] [Generation Theory]. Halle: Hendelianis, 1759. https://archive.org/details/theoriagenerati00wolfgoog [40] (Accessed January 14, 2014).

In eighteenth century Germany, Johann Friedrich Blumenbach studied how individuals within a species vary, and to explain such variations, he proposed that a force operates on organisms as they develop. Blumenbach used metrical methods to study the history of humans, but he was also a natural historian and theorist. Blumenbach argued for theories of the transformation of species, or the claim that new species can develop from existing forms. His theory of Bildungstrieb (formative drive), a developmental force within all organisms, influenced the conceptual debates among many late nineteenth and early twentieth century embryologists and naturalists.

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[16] http://eol.org/pages/4454738/overview
[17] http://eol.org/pages/323858/overview
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[19] http://dx.doi.org/10.5962/bhl.title.50868
[20] http://dx.doi.org/10.5962/bhl.title.37039
[21] http://www.ub.uni-bielefeld.de/cgi-bin/neubutton.cgi?pfad=/diglib/aufkl/goettmag/134802&seite=00000255.TIF
[22] http://dx.doi.org/10.5962/bhl.title.49162
[23] http://dx.doi.org/10.5962/bhl.title.12463
[24] https://embryo.asu.edu/search?text=Leipzig
[25] http://archive.org/stream/goethesgedichte03goetgoog#page/n5/mode/2up
[26] https://embryo.asu.edu/search?text=Homology
[27] http://www.biodiversitylibrary.org/title/8428#page/11/mode/1up
[28] http://archive.org/stream/elementaphysiolo01hall#page/n7/mode/2up
[29] http://dx.doi.org/10.5962/bhl.title.64638
[30] http://dx.doi.org/10.5962/bhl.title.45601
[31] https://archive.org/details/kritikderurteils00kantuoft
[32] https://archive.org/details/kantscritiqueof00kantuoft
[33] http://dx.doi.org/10.5962/bhl.title.68927
[34] http://shinku.nichibun.ac.jp/NOMA/new/books/11/suema000000003qu.html
[35] https://embryo.asu.edu/search?text=American%20Philosophical%20Society
[36] https://embryo.asu.edu/search?text=Cambridge%20University
[37] https://embryo.asu.edu/search?text=uterus
[38] https://archive.org/details/johannisswammer00swamgoog
[39] https://embryo.asu.edu/search?text=Theoria%20Generationis
[40] https://archive.org/details/theoriagenerati00wolfgoog
[41] https://embryo.asu.edu/library-congress-subject-headings/anthropology
[42] https://embryo.asu.edu/library-congress-subject-headings/anatomy-comparative
[43] https://embryo.asu.edu/library-congress-subject-headings/blumenbach-johann-friedrich-1752-1840
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