DECADES OF DIVERGENCE IN DINO DEPICTION: SAUROPOD EDITION

A study of the visual and thematic characteristics of images of Apatosaurus, Brachiosaurus, and Diplodocus, as found in 54 books published since 1959.

METACHARACTERISTICS

*"Unknown Genera":

Number of Images by Dinosaur,

Including Unknown Genera*

were. Thus they were included in the survey, but assigned to Unknown Genera.

Some books show dinosaurs without labeling them. Sometimes there is another dinosaur in the same book that looks exactly the same, so the unlabeled one can be accurately identified. However, other times the

unlabeled dinosaur may be drawn in a slightly different way, or there may not be another labeled version.

Since many books draw sauropods as a sort of generic dinosaur without trying to assign them a specific

genera, I had to sort out unlabeled dinosaurs that were likely to be one of the "Big Three" from those that

were either a generic made-up sauropod, or were actual sauropods that were from different genera (such

as Titanosaurs). In this survey, the category "Unknown Genera" refers to dinosaurs which, based on the con-

text of the book, seemed likely than not to be one of the Big Three. However, there was still some degree

of ambiguity about whether they were one of the Big Three, or about which one of the Big Three that they

Number of Images by Dinosaur,

with Unknowns Allocated to

Their Most Likely Genera

Kinds of Books

Created by Chris Wildrick, Associate Professor School of Art, Syracuse University, 2019. chris.wildrick@gmail.com, www.chriswildrick.com.

situation where, after examples of its skele-

Brontosaurus continued to be popular, maybe

just because it sounded cooler, to the extent that many early dinosaur books used that

Apatosaurus confusions were further exacerbated due to the fact that some of its skele-

tons were displayed with the wrong-shaped

skull for many years (a Camaraurus-like skull,

original Brontosaurus skeleton is actually dif-

ferent from the Apatosaurus skeleton after

all, and so both Apatosaurus and Brontosau-

rus are real names for different species. So

now some new dinosaur books have legiti-

mately brought back the Brontosaurus name.

Somewhat similarly, there has been a recent

debate over the name of Brachiosaurus. For a

long time some argued that one of the most

famous examples of a Brachiosaurus was

actually different from the other Brachiosaurs,

and was instead its own genera, called Giraf-

Thus, dinosaurs that are called Brachiosaurus

in older books may be what we still call Bra-

chiosaurus, or they may actually be what we

fatitan. This is now largely accepted.

instead of a Diplodocus-shaped skull).

This poster is the result of a study in which I analyzed 222 pictures of Apatosaurus, Brachiosaurus, and Diplodocus, noting their visual and thematic characteristics, with the intent of determining how much anatomical, stylistic, and thematic variation existed within a standard pool of dinosaur images. I chose to study these three dinosaurs because they are the most popular sauropods ("long necks"), and in order to keep some focus within the material. A previous study looked at the three most popular dinosaurs overall (Tyrannosaurus, Triceratops, and Stegosaurus), and a future study will examine pterosaurs. As a further limitation, given the nearly infinite number of available images of these dinosaurs, I restricted the pool of images that I studied to those that appear in my personal library. bTherefore, this study looks at all the images of these three dinosaurs that appear in any book that I own, which turns out to be 54 books. This is two less than the previous study; the two studies contain a lot of the same books, but the first study contained books this one did not, and vice versa, simply because not all books on dinosaurs happen to have images of the specific dinosaurs in this or the other study. The books range widely in style and content, including surveys of paleontological imagery, adults' and kids' science books, kids' story books, and even anti-evolution religious texts. When I originally surveyed the images, I marked down whether each image displayed certain characteristics. The set of characteristics used in the study were suggested by the images themselves, as well as various other visual analyses of dinosaurs I have done in the past. After

collecting all the data, I aggregated them here. This poster simply presents the basic information about the popularity of each characteristic. Future studies may analyze the relationships between the various characteristics and their sources, such as the relationship between the images' accuracy and the date of their creation, or the kind of books in which they appeared.

The Books Used in This Study, in Chrono-A Note on Names logical Order. Page Numbers Indicate the Apatosaurus has often popularly been called Pages of the Images Used. Brontosaurus. This stems from a complicated

Andrews, Roy Chapman. In the Days of the Dinosaurs. tons were first found, one scientist named one 1959. Endpapers, 11, 23, 30, 32, 76. of its skeletons Apatosaurus, and another Holsaert, Eunice, and Robert Gartland. A Book to Begin on: Dinosaurs. 1959. 6-7, 19, 26-30. scientist named another one of its skeletons Brontosaurus. Eventually this confusion was Blough, Glenn. Discovering Dinosaurs. 1960. 2-3, resolved and the genera became officially known as Apatosaurus. However, the name Parish, Peggy. Dinosaur Time. 1974. 1, 10-11, 14-5,

Owen, Ellis. Prehistoric Animals: The Extraordinary Eastman, David. I Can Read About Prehistoric Animals. 1977. 1, 4, 21, 22. Most, Bernard. If the Dinosaurs Came Back. 1978. 4-5,

Their Living Relatives. 1979. 4-5, 36-7, 47, 62-3. Emberley, Michael. Dinosaurs! A Drawing Book. 1980. Aliki. Digging up Dinosaurs. 1981 version. 1, 6-7.

British Museum of Natural History. Dinosaurs and

Selsam, Millicent E., and Joyce Hunt. A First Look at Dinosaurs. 1982. 10-11, 30. Aliki, Dinosaurs Are Different, 1985, 18-19. Milton, Joyce. Dinosaur Days. 1985. 8-9, 18-9, 20-3

Bakker, Robert T. The Dinosaur Heresies. 1986. 19, 30, 96, 202, 268-9, 388, 450, 460-1 Raintree Publishers. Let's Discover the Prehistoric World. 1986. 35-7, 41. Gibbons, Gail. Dinosaurs. 1987. 6-7, 18-9, 24-5.

Aliki. Digging up Dinosaurs. 1988 version. 4, 11. Nelson, Jeffrey S. *Dinosaur Jokes & Riddles.* 1988. 6, 17. Teitelbaum, Michael. Dinosaurs of the Land, Sea, and Air. 1988. 10, 18-19, 26-7, 50, 52-3, 56-9, 70, 214-5,

Barton, Byron. Dinosaurs, Dinosaurs. 1989. Back end-McMullan, Kate. Dinosaur Hunters. 1989. 6-7, 23,

now call Giraffatitan. This survey includes ex-Teitelbaum, Michael. Colossal Book of Dinosaurs. amples of any dinosaur listed as Brachiosau-1989. 14-5, 148-51, 173, 176, 187. rus or Giraffatitan. Gish, Duane T. Dinosaurs by Design. 1992. 17, 21, Gurney, James. Dinotopia. 1992. 5, 6, 33, 34, 36, 38-9, 82, 90, 96-7, 103, 111, 118, 152-3.

Cole, Joanna. The Magic School Bus: In the Time of the Dinosaurs. 1994. 3, 16-9. Edwards, Pamela Duncan. Dinorella. 1997. lx. Moss, Jeff. Bone Poems. 1997. 14-5, 34-5. Tallarico, Anthony. Dinosaurs: Lost in Time, a Search and Find Book. 1997. 2-5. Ham, Ken. The Great Dinosaur Mystery Solved! 1998

Mitchell, W. J. T. The Last Dinosaur Book. 1998. 51, Sharp, Anne. Jigsaw Dinosaurs. 2000. 6, 13-4. Yolen, Jane. How Do Dinosaurs Say Goodnight? 2000. Yolen, Jane. How Do Dinosaurs Get Well Soon? 2003.

Endpapers, 12-13, 28-29. Joyce, William. Dinosaur Bob. 1988. 16-17. Webb, Valerie and Create-a-Book. My Dinosaur Adventure. 1988. 2, 9, 26. Hoff, Syd. Danny and the Dinosaur. 1958. 14-15.

Hoff, Syd. Danny and the Dinosaur Go to Camp. 1996.

Debus, Allen A. and Diane E. Debus. Paleoimagery:

The Evolution of Dinosaurs in Art. 2002. 104, 165,

Sanz, Jose Luis. Starring T. Rex! Dinosaur Mythology

Frost, Erica. Harold and the Dinosaur Mystery. 1979. Folder, Alan. Paper Dinosaurs. 2000. 14, 37.

and Popular Culture. 2002. 23, 27, 28, 49, 75, 102. Dixon, Dougal. Dinosaur Revealed. 2003. 6-7. Rayfield, Emily. Dinosaurs: A Flowmotion Book. 2003. 15, 30-1, 34-5. Mugford, Simon. Dinosaur A-Z. 2004. 4-5, 28-9. Norman, David, and Angela Milner. Eyewitness Dinosaur. 2004. 12, 14, 18. De la Bedoyere, Camilla. Why Why Why Did Dinosaurs Lay Eggs? 2005. 10-13. Kudlinski, Kathleen V. Boy, Were We Wrong About Dinosaurs! 2005. 8, 10, 16-8.

Sabuda, Robert, and Matthew Reinhart. Encyclopedia Prehistorica: Dinosaurs. 2005. 7-8. Sheldon, David. Barnum Brown, Dinosaur Hunter.

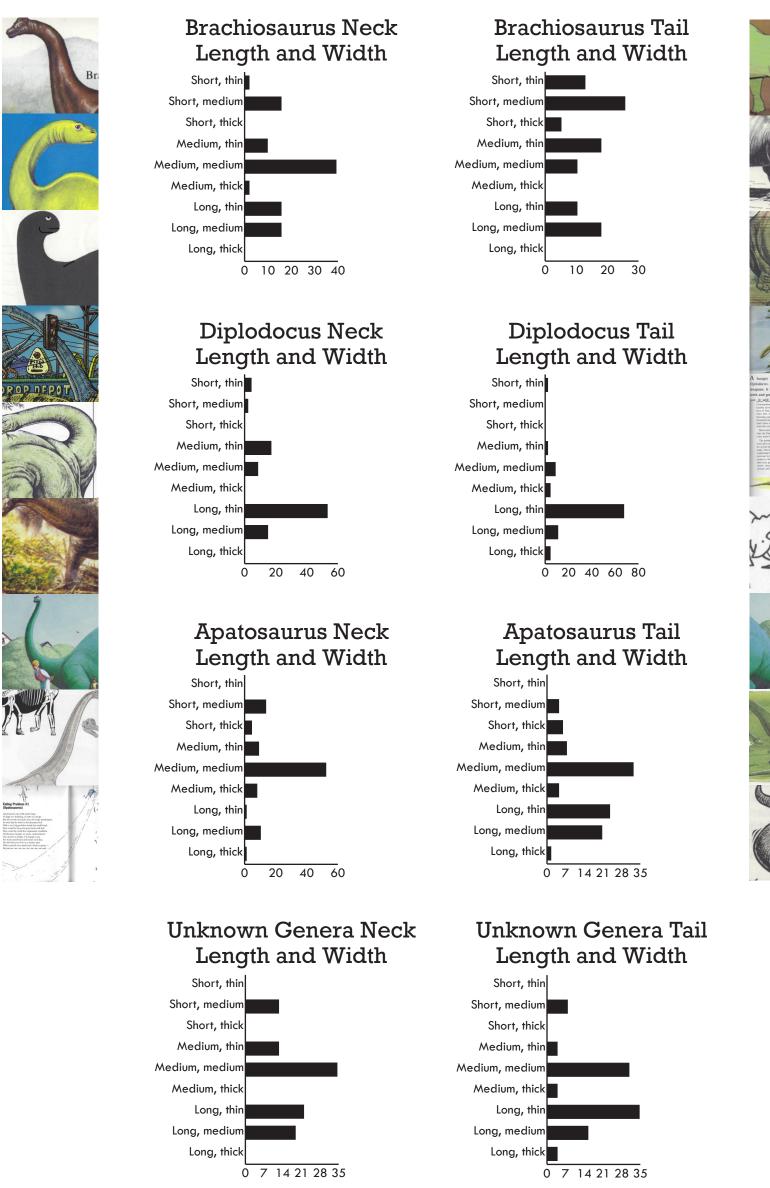
Sibbick, John. My Favorite Dinosaurs. 2005. 6-9, 19. 2006. Endpapers, 5, 12-3. Johnson, Kirk. Cruisin' the Fossil Freeway. 2007. 10-11, 22, 32, 36, 58, 68, 100-1.

Kelly, Erica, and Richard Kissel. Evolving Planet.

128-9, 131, 140-1, 203.

Paul, Gregory S. The Princeton Field Guide to Dino-Pim, Keiron. Dinosaurs: The Grand Tour. 2013.

BONUS! NECK AND TAIL SIZES ACROSS GENERA



How to Use This Chart Recently, some scientists have argued that the

The chart is divided into fourmain sections: Metacharacteristics, which describes the books and images as images; Characteristics Across Genera, which relate to all three of the dinosaurs in this study; Shared Characteristics Broken Down by Genus, which are characteristics all three dinosaurs share, but with the results broken down by dinosaur, and Genus-Specific Issues, which are a few characteristics that only one genus exhibits. Some of these sections are broken down further into subsections, largely due to the difference in graph formats. All numbers are percentages.

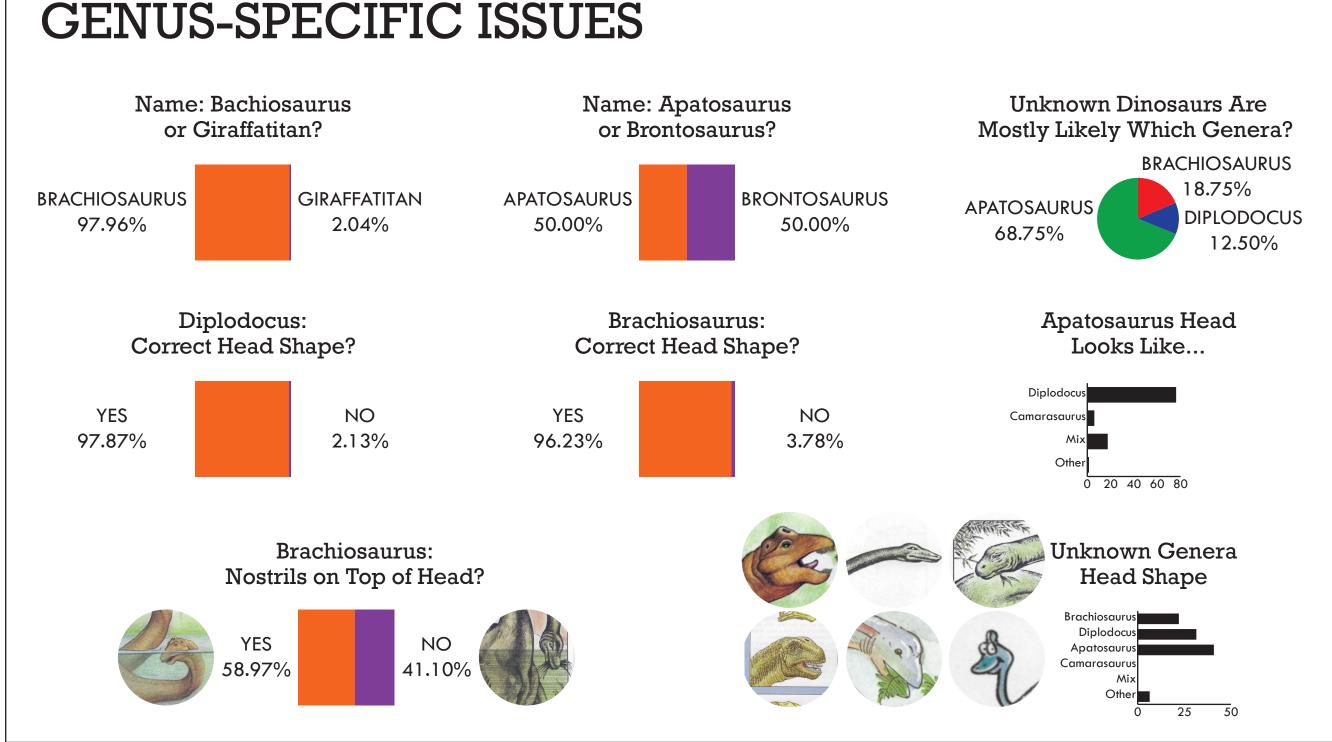
Each section lists a number of characteristics. Each characteristic has a small graph that shows how many of the images in this study possessed that characteristic. The graph is usually accompanied by some images that illustrate the characteristic's variations. For example, the graphs for the characteristic "Running?" give percentages for how many images of each genera were shown running. One of the images next to the graph shows a sample running dinosaur, and the other image shows a dinosaur that is not running.

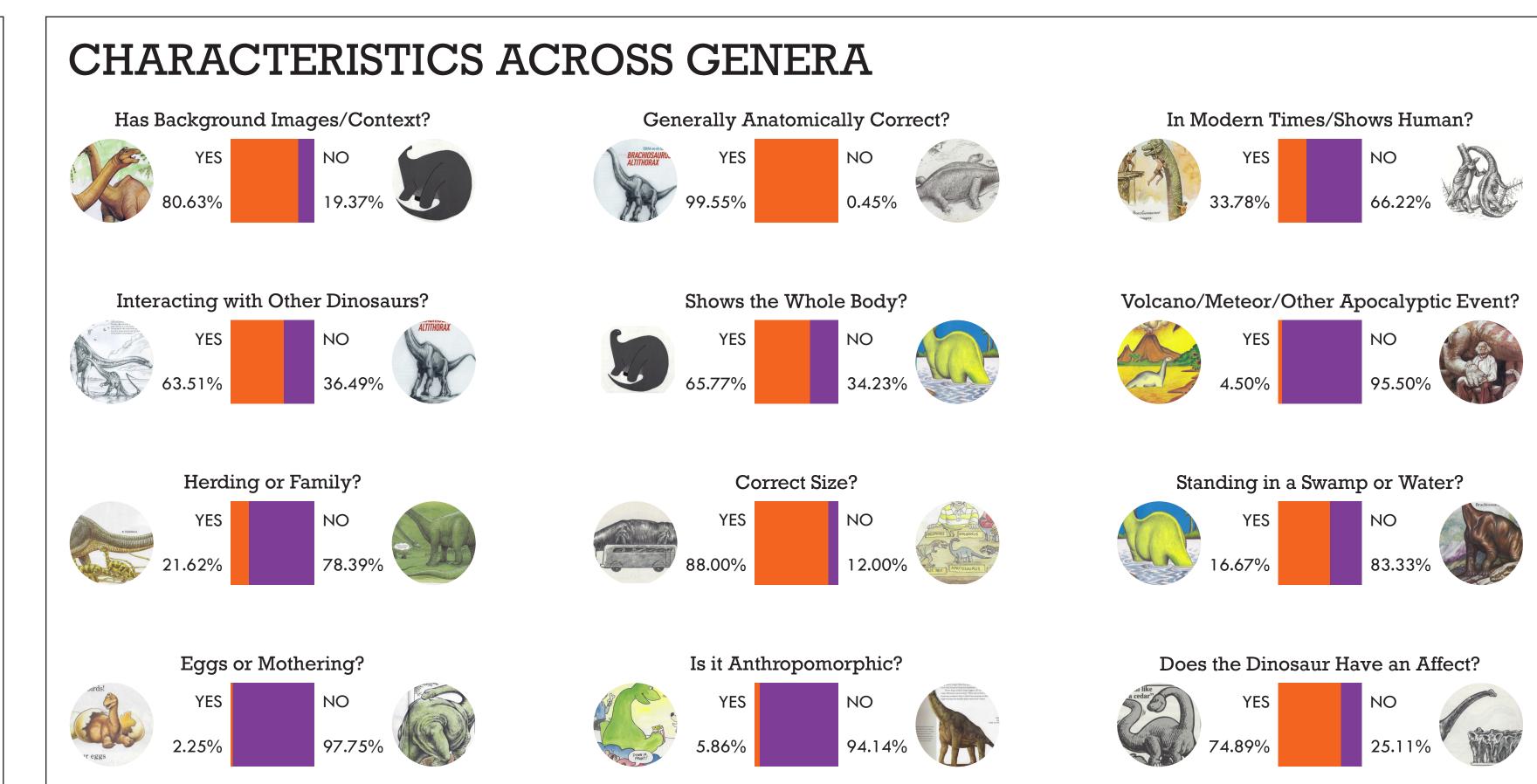
If part of a dinosaur's body was blocked or cropped in the original image, or if it was too small for details to be determined, that characteristic was marked "unknown" in the original data pool. The data on this chart discards the "unknowns" and aggregates only the "known" characteristics.

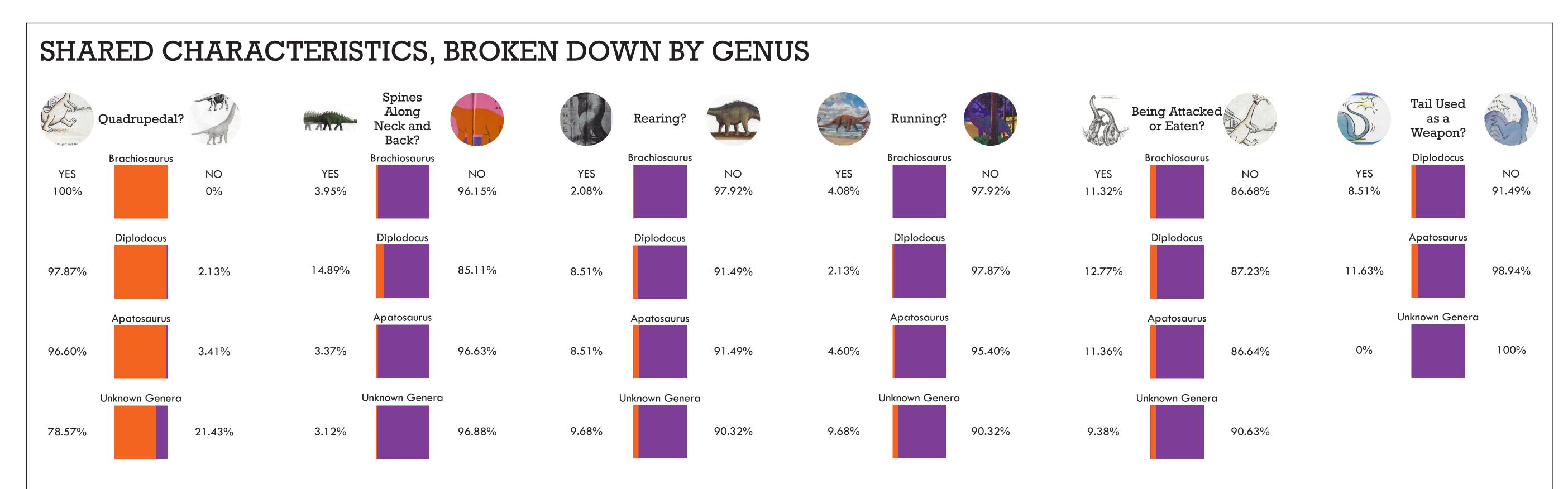
Some characteristics are fairly objective, such as the number of toes, or whether a dinosaur is standing in water or on dry land. Others are more subjective and require judgment on my part, such as the difference between a long thin tail and a medium-length, medium-thickness tail, or whether a neck is sticking straight out, or up. While these are judgment calls on my part, I did my best to apply that judgment consistently.

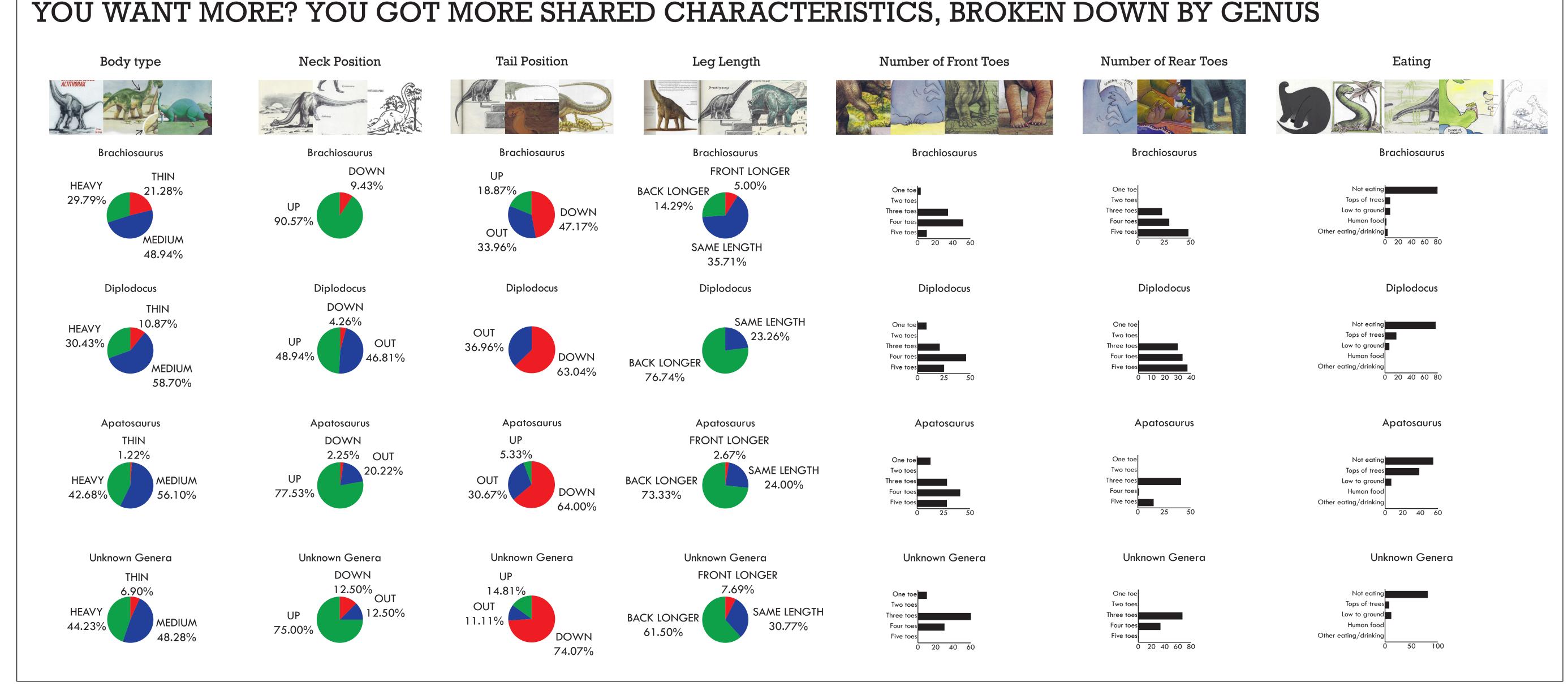
EVEN MORE! CHARACTERISTICS ACROSS GENERA Black & White vs Color Images Dinosaur Colors (Dinosaurs May Have More Than











A Note on the Terms "Genus" and "Genera" We tend to think of different dinosaur names such as Diplodocus or Triceratops as the names of their species. However, they are really the dinosaur in that genus. For instance, for Tyrannosaurus rex, "Tyrannosaurus" is the genus, and "rex" is the species. Similarly, Brachiosaurus altithorax is a dinosaur from the genus "Brachiosaurus" and the species "altithorax." Thus, Apatosaurus, and Diplodocus are not just different species, they are different genera, which is the term used throughout this poster.