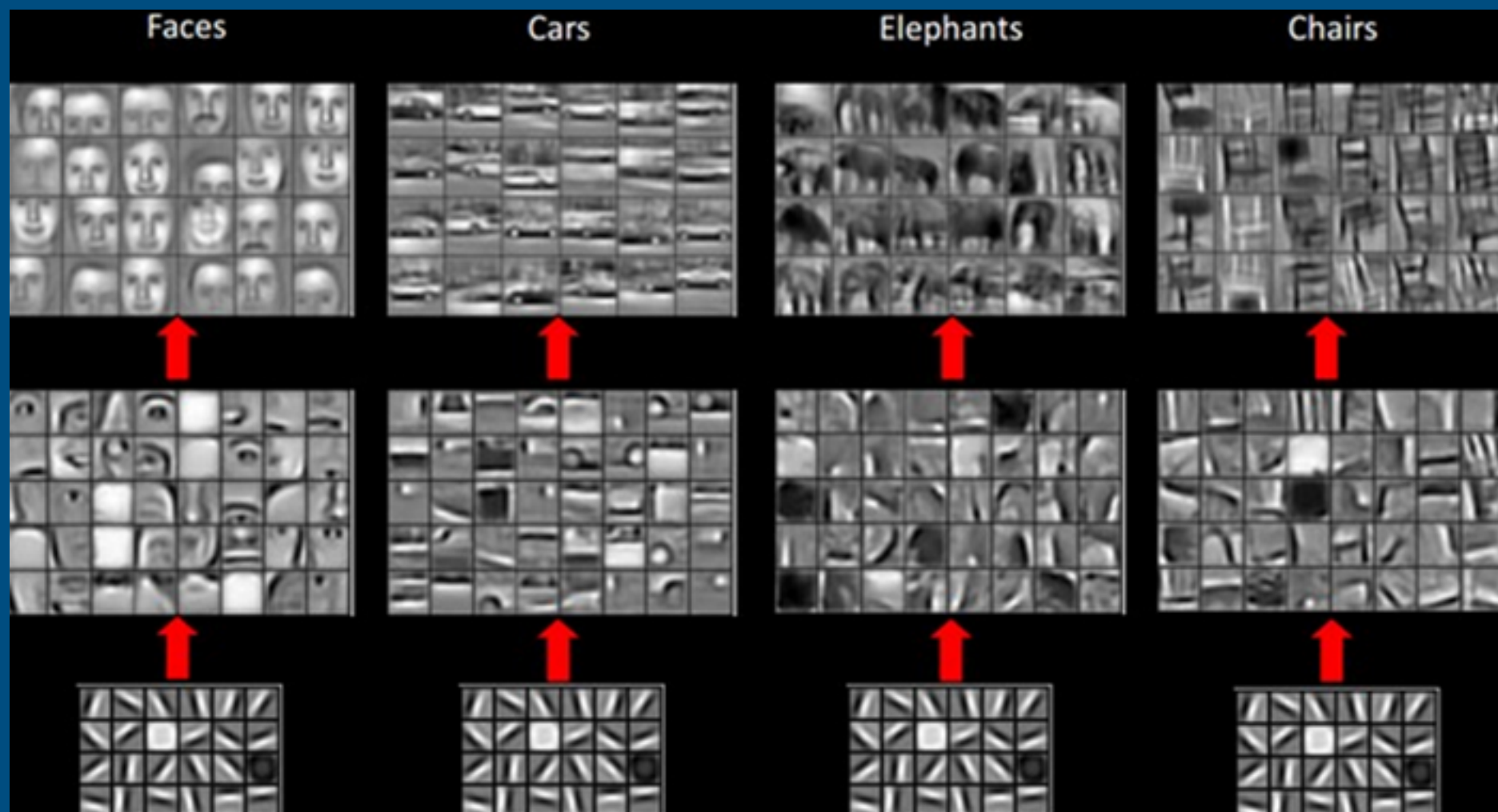
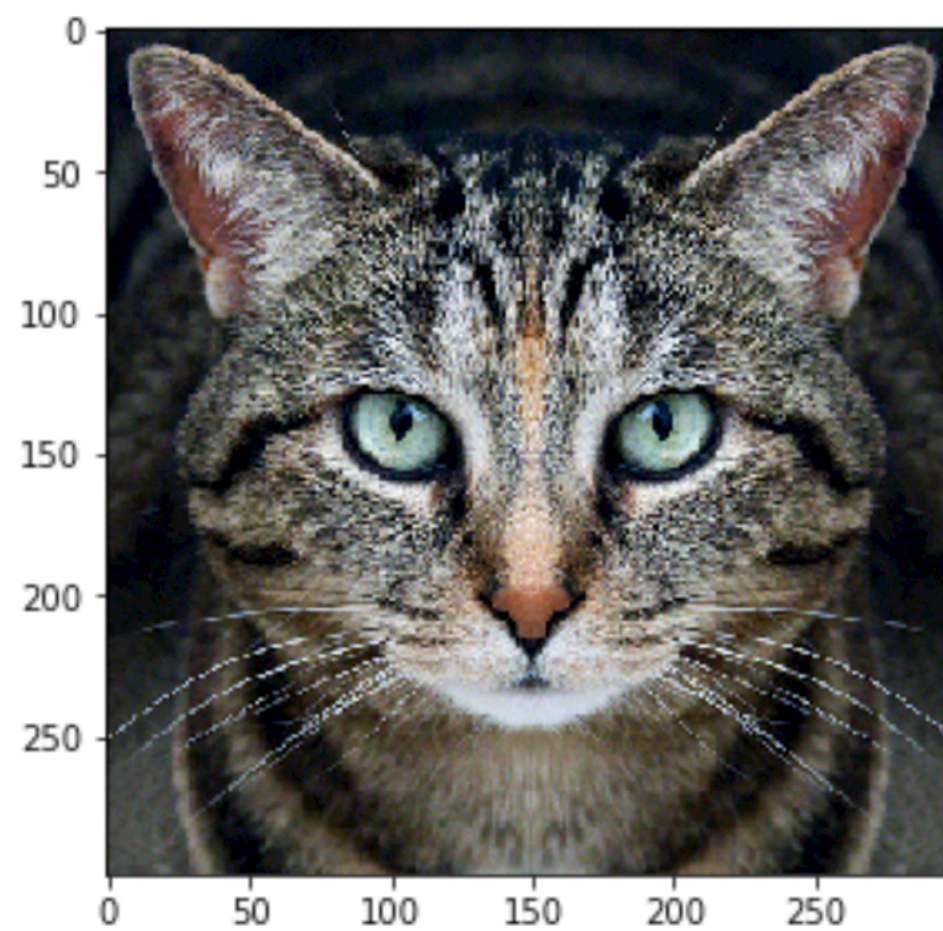
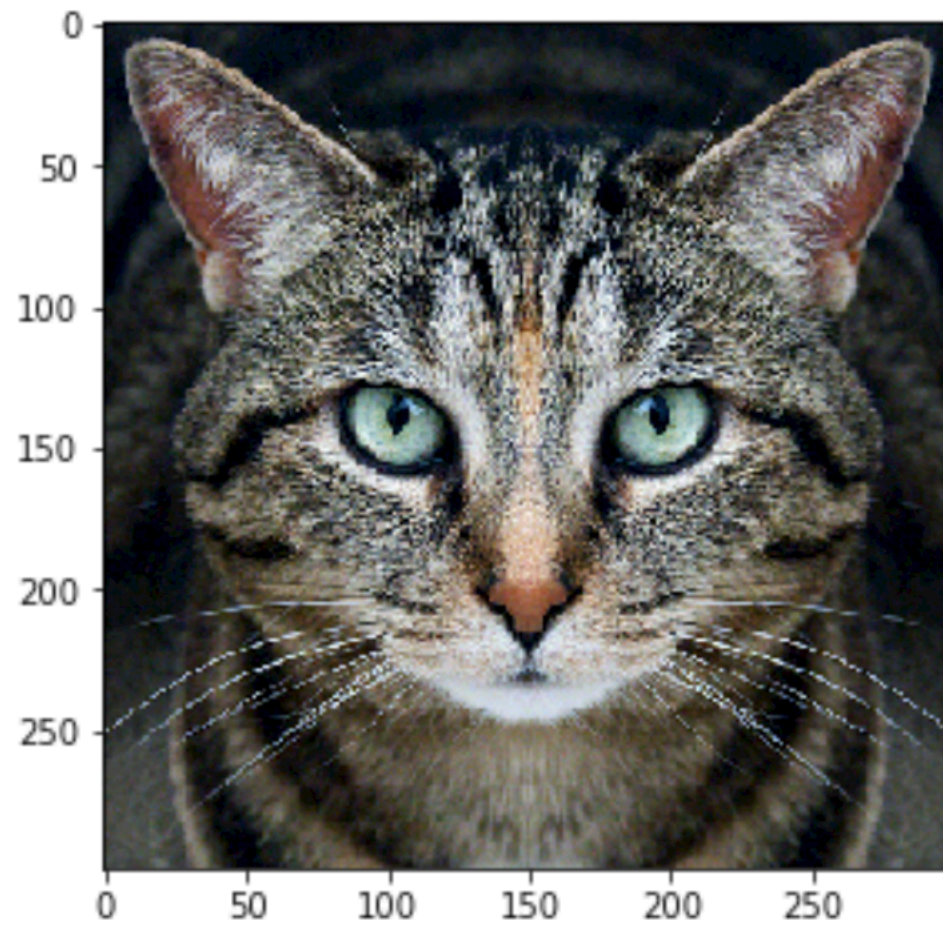


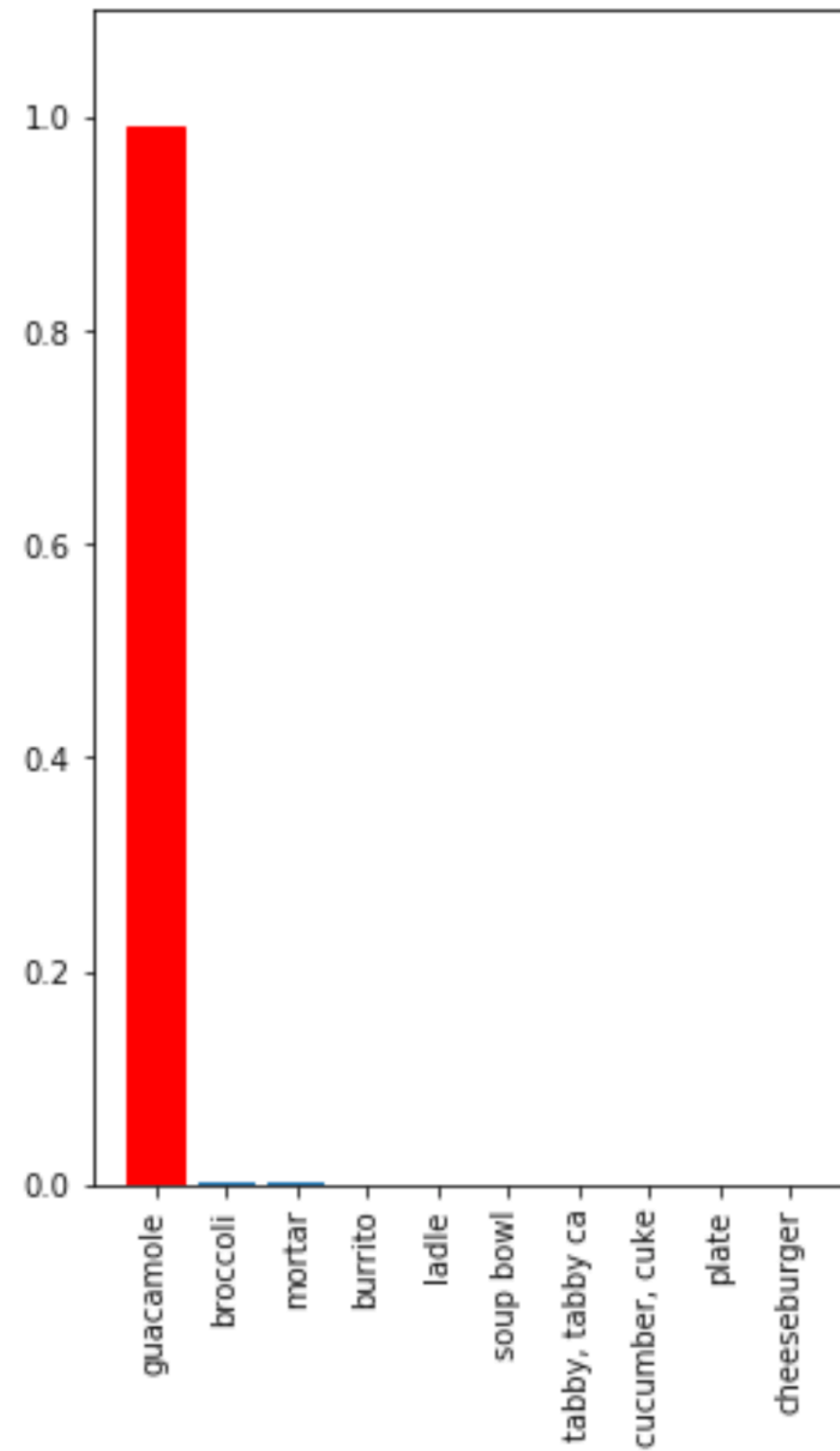
WHAT A DEEP CONVOLUTIONAL NEURAL NET LEARNS







Tabby Cat ~ Guacamole ?!

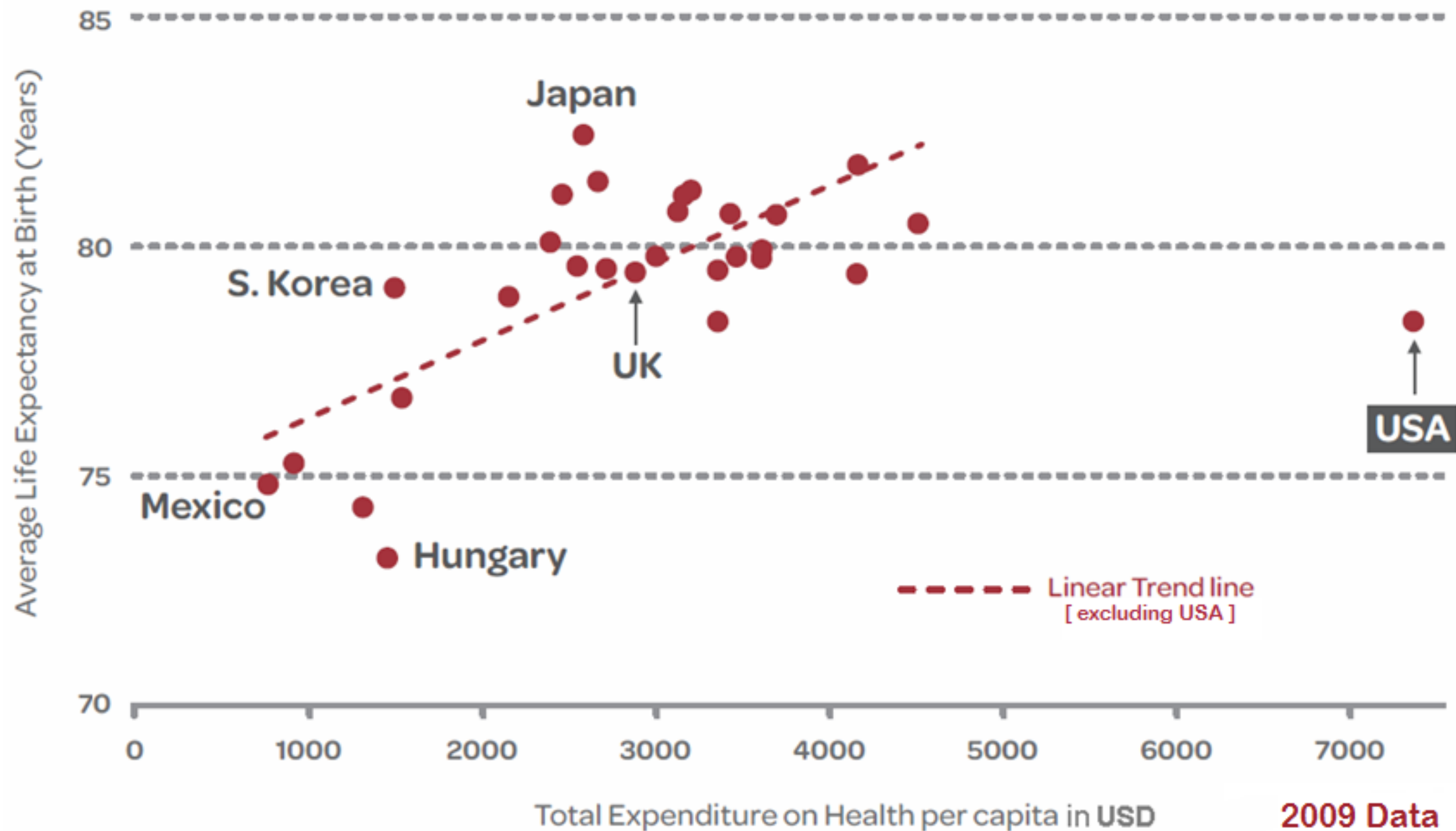


MMCi Practical Data Science

lecture 09

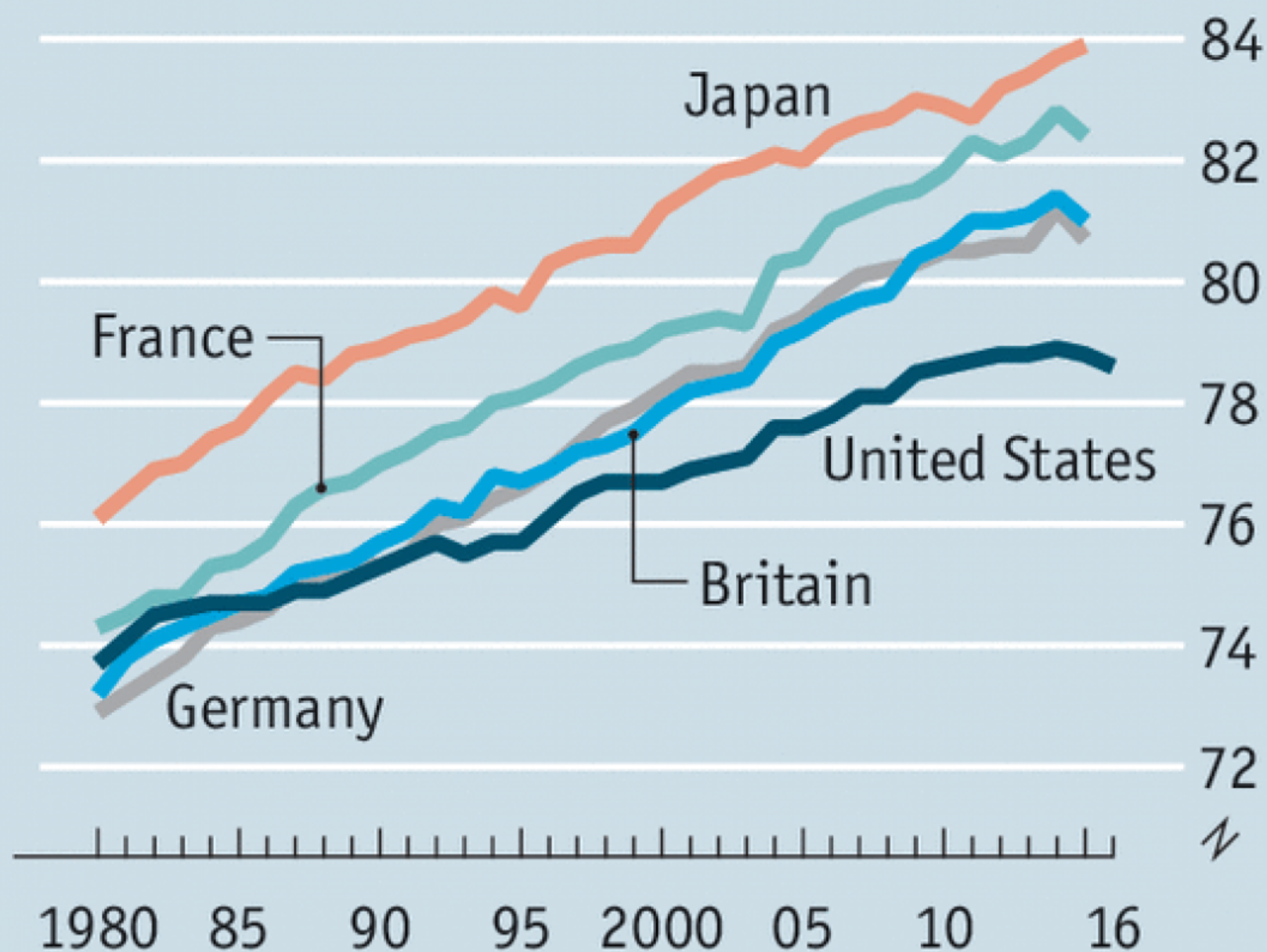
erich s. huang
erich.huang@duke.edu

Healthcare Spending per capita vs. Average Life Expectancy Among OECD Countries



Wrong turn

Average life expectancy at birth, years



Sources: OECD; CDC



DECEMBER 23, 2010

Michael E. Porter, Ph.D.

Achieving high value for patients must become the overarching goal of health care delivery, with value defined as the

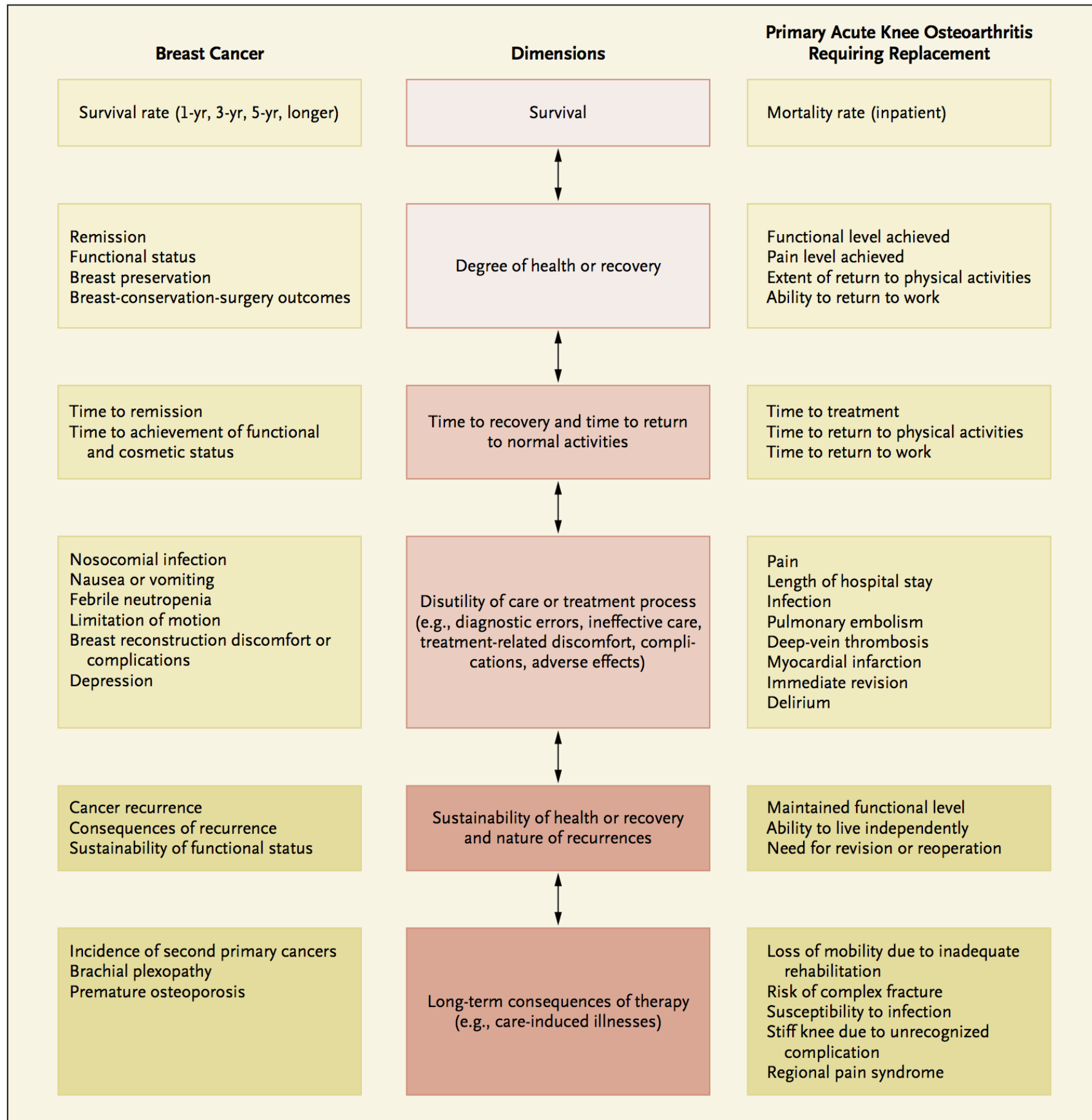
Value should always be defined around the customer, and in a well-functioning health care

Outcomes, the numerator of the value equation, are inherently condition-specific and multidimensional. For any medical condition, no single outcome can-

Define value?

$$\textit{value} = \frac{\textit{Outcomes}}{\textit{Cost}}$$

Multidimensional



6 Use Cases

High Cost Patients

Readmissions

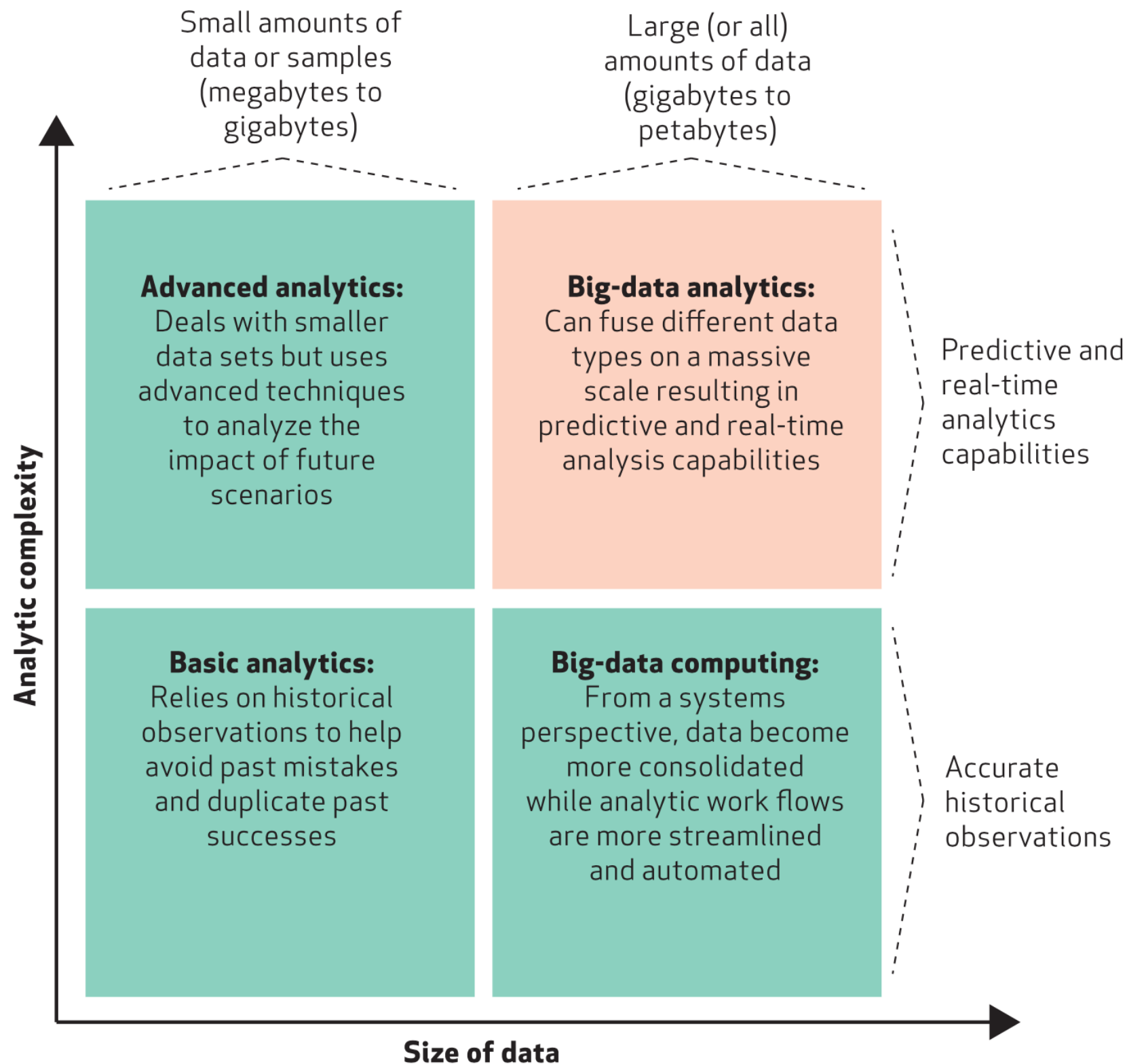
Triage

Decompensation

Adverse Events

EXHIBIT 1

Data Analytic Approaches, By Size Of Data And Analytic Complexity

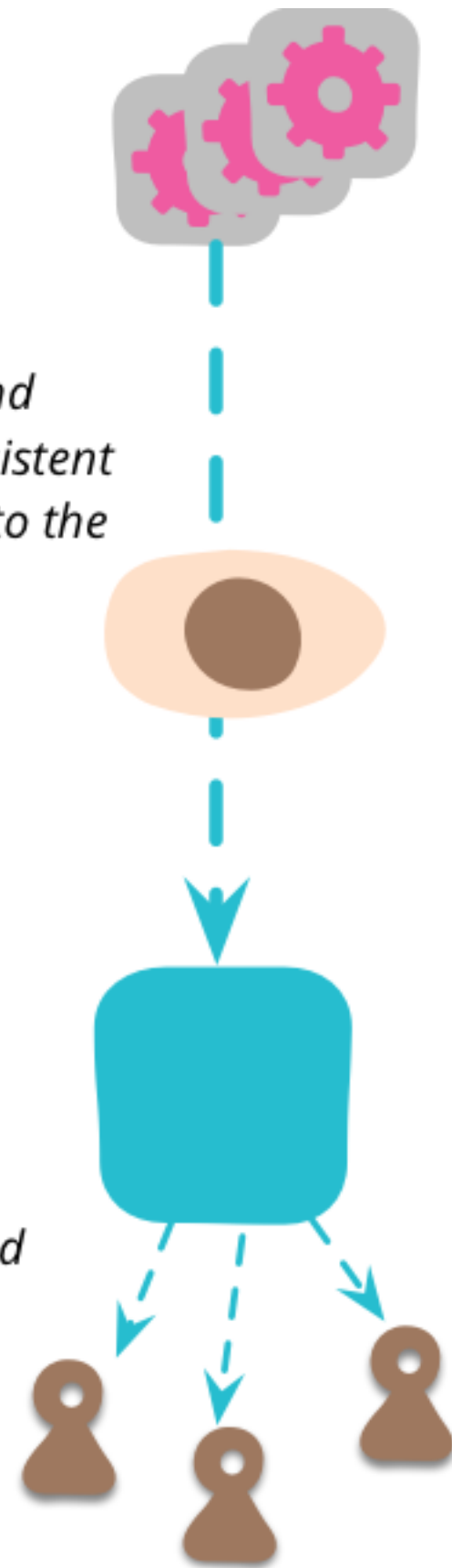


SOURCE Booz Allen Hamilton. Cloud analytics playbook [Internet]. McLean (VA): Booz Allen Hamilton; 2012 [cited 2014 Apr 29]. Available from: <http://www.boozallen.com/media/file/cloud-analytics-playbook.pdf>. Adapted with permission.

Data Lake (?)

With a **data warehouse**, incoming data is cleaned and organized into a single consistent schema before being put into the warehouse...

... analysis is done directly on the curated warehouse data



With a **data lake**, incoming data goes into the lake in its raw form...

... we select and organize data for each need



Swamp (?)

Operational systems communicate with each other via service connections, ignoring the data lake

