Chapter Two

Modern
Developmental Theory

Part 1

A *Theory* is…

- A broad set of statements describing the relation between an observed set of phenomena and the factors assumed to affect those phenomena.
  - Organizes research results and attempts to explain them
  - Theorizing occurs in science and pseudoscience alike
- Examples?

Clashing Theories

- Science is not perfect and is influenced by the imperfect human beings that create it
- Theories clash
  - Example: language development
- *Worldviews* of scientists dominate the questions that they ask and the answers they propose about their subject matter.
  - *Tabula Rosa* VERSUS *programmed development*

Clashing Theories

- *Realistic view of science* recognizes this and accounts for scientist's biases
  - Science is a product of human behavior
- Three developmental worldviews:
  - Mechanistic: human beings as operating like machines, as collection of parts (responses) that can be separated or taken apart.
  - Organismic: individual as a whole being who cannot be studied by taking apart its responses (maturation - Piaget).
  - Contextual: behavioral development as the product of dynamic interplay between an individual and the environment (behavior analysis).

Four Dimensions on Which Theories Differ

Structural Knowledge vs. Functional Knowledge

Description vs. Explanation

Nature vs. Nurture

Continuity vs. Discontinuity

Structure vs. Function

- Structural knowledge
  - What something is made of
    - The parts of a computer
    - The parts of the brain
    - What a child does
- Functional knowledge
  - How something works
    - How to use a word processor
    - How the brain works
    - The processes by which the child learned to do what he does
- Which one is right?
  - Both are useful in different analyses
  - Hypothetical structures (schema, memory storage)!

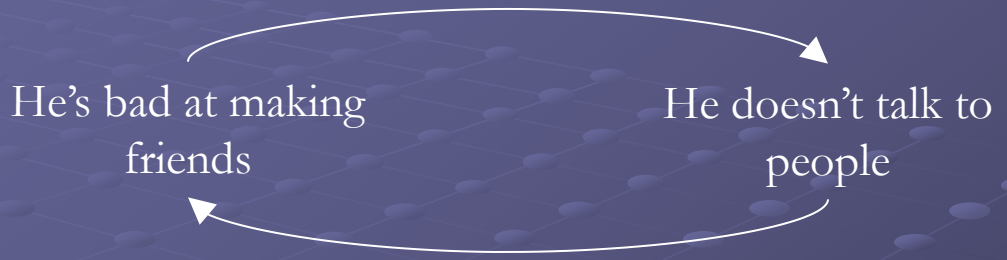
Description vs. Explanation

- Description – the features, relations, or qualities of an event or thing
  - "give an account of" – "baby biographies"
  - Necessary activity of any science
  - Good scientific description limits cultural influence
- Explanation – a more detailed description that deals with "cause"
  - Functional relations (IV and DV)
  - Allows for prediction & control
- Which one is right?
  - Both!

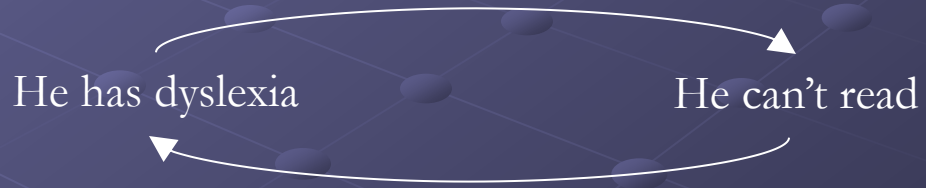
Reification in Scientific Explanation

- Descriptions often confused with explanations
  - Circular explanation: ALL OVER dev. psychology
    - Ex: dyslexia, short attention span, intelligence
    - Summary descriptions used as causes
- Reification: treating a hypothetical constructs as real
  - **Confusing nouns and verbs**
  - Descriptions are made real and concrete "things"
  - Autism, ADHD
  - Leads to the study of hypothetical structures of which behavior/learning is a function

Circular Explanation



Reification

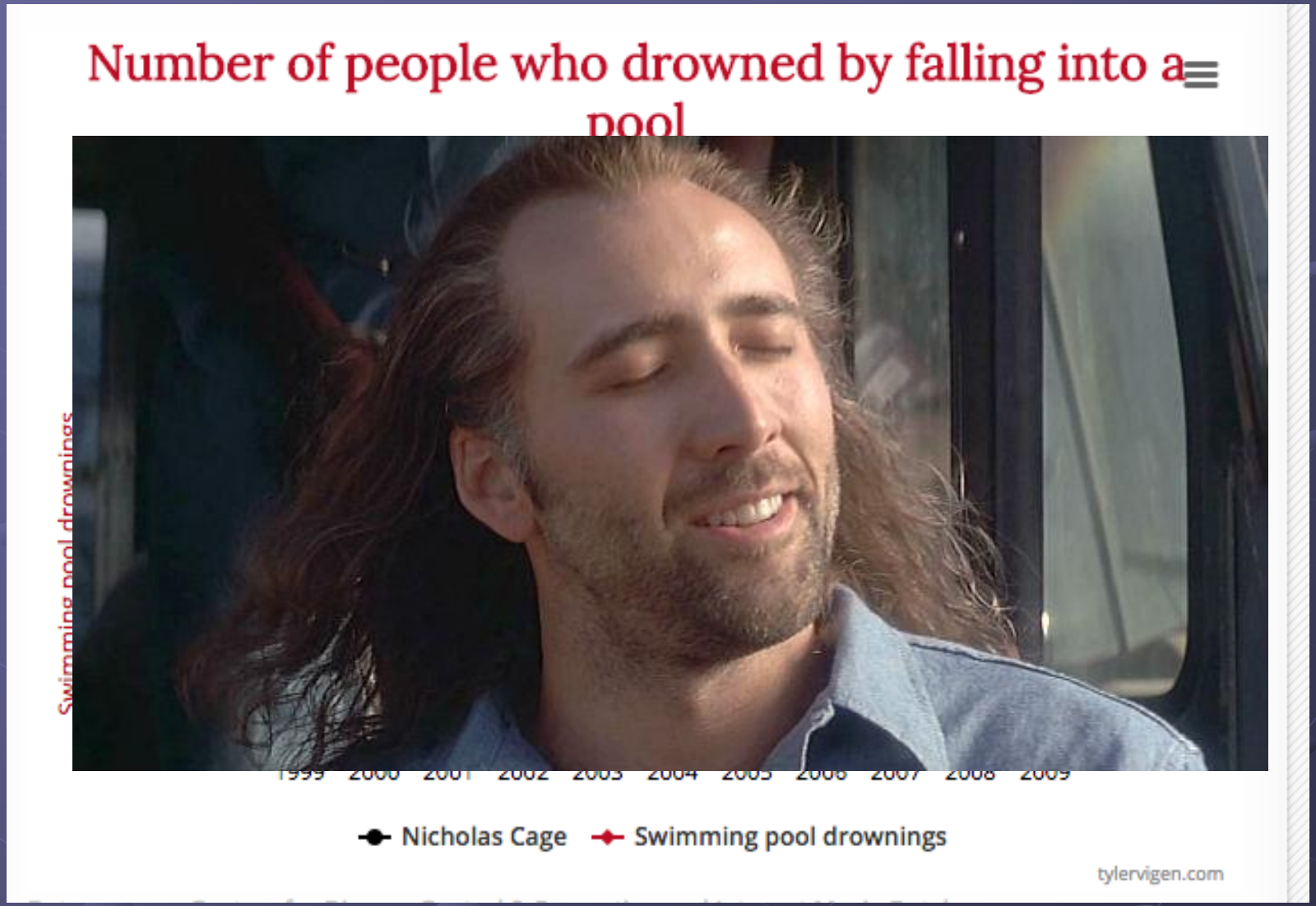


- Both *describe* the behavior. They don't *explain* it.

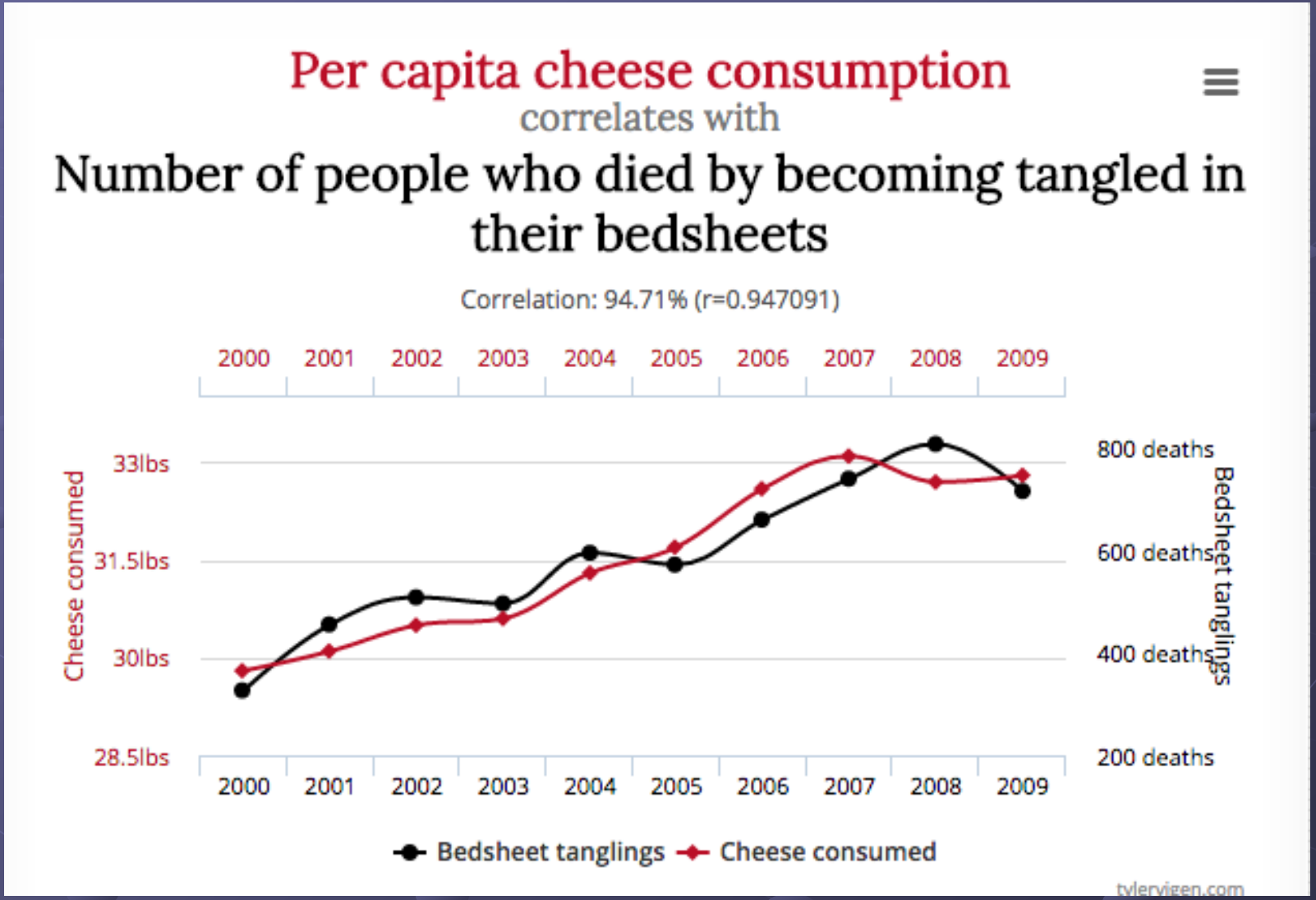
Prediction and Control

- Prediction
  - Deals with correlation
    - Correlated past events are likely to occur again under the same conditions (reading and language, clouds and rain, SES and crime)
  - Not "causal," not "because" (under what conditions)
  - Functionally related
- Control
  - Experimental manipulation leads to the discovery of important variables that can then be delivered/removed to make behavior more/less likely.

Prediction and Control



Prediction and Control



Nature vs. Nurture

- Nature = Genetic
  - E.g., heredity, maturational forces
- Nurture = Experience (Environment)
  - E.g., culture, child-rearing practices, schooling
- Which one is right?
  - Neither! Both are involved!
  - The "false dichotomy"
  - 100% Nature; 100% Nurture

Continuity vs. Discontinuity

- Continuity = accumulative process
  - New behaviors evolve from old ones
    - E.g., babbles – approximations – words – sentences
- Discontinuity = stages
  - Abrupt changes in behavior
    - E.g., words and babbles involve separate processes and mechanisms and "emerge," stage theories
- Which one is right?
  - Accumulative development
  - Most discontinuity theories are reified descriptions

9 Criteria for Judging Developmental Theories

- Accuracy: real children, not hypotheticals (Freud)
- Clarity: easy to understand
- Predictability: explains past events and predicts future events
- Practicality: applicability to social problems ("intelligence")
- Internal Consistency: terms and concepts consistent with theory AND results (b/d "mis-wiring")

9 Criteria for Judging Developmental Theories

- Parsimony: limits unproven assumptions and has as few constructs as possible (SO many theories in developmental psychology)
- Testability: all constructs should be testable (id, ego, superego)
- Productivity: stimulates new research (LAD)
- Self-Satisfaction: makes good sense