

## An Attempt to Formulate an Objective Test for Detecting Design

(Relevant to "Introduction" to course, section "VI. Objectivity versus subjectivity with respect to the design inference")

### I. Origins of modern science

#### A. Pre-requisite: A cultural mindset linking particulars and universals

Alfred North Whitehead, *Science and the Modern World*:

"faith in the possibility of science" arose from the European mind which combined:

- Greek idea of inexorable law
- Judeo-Christian world view, including "the inexpugnable belief that every detailed occurrence can be correlated with its antecedents in a perfectly definite manner, exemplifying general principles"; "It must come from the medieval insistence on the rationality of God, conceived as with the personal energy of Jehovah and with the rationality of a Greek philosopher."

#### B. Baconian vs. Aristotelian science

Bacon: "Nature, to be commanded, must be obeyed." *Novum Organum*, 1620

Aristotle's four-fold theory of causation:

material  
efficient  
formal  
final

Bacon opposed including either formal or final causes in science

### II. Historical evolution of views of final causes in science from Bacon's day to present

#### A. Seventeenth century scientists were interested in both final and efficient causes

##### 1. Galileo (1564-1642)

"God is known by Nature in His works, and by doctrine in His revealed word."

**but...** "in discussions of physical problems we ought to begin not from the authority of Scriptural passages, but from sense experience and necessary demonstrations" and the book of God's works "is written in the language of mathematics"

##### 2. Kepler (1571-1630)

saw himself as attempting "to think God's thoughts after Him" and saw evidence of design in the "harmonies" of the motions of the heavenly spheres,

**but...** "Nothing [about nature] can be known completely except quantity or by quantities" e.g. Kepler's 3rd law of planetary motion:

$$\frac{(\text{period of } a)^2}{(\text{period of } b)^2} = \frac{(\text{distance of } a \text{ from sun})^3}{(\text{distance of } b \text{ from sun})^3}$$

Earth	365 days	93,000,000 miles
Mercury	88 days	36,000,000 miles

$$\begin{aligned} (365/88)^2 &= (93,000,000/36,000,000)^3 \\ 4.14^2 &= 2.58^3 \\ 17.2 &= 17.2 \end{aligned}$$

##### 3. Newton (1642-1727)

famous for dictum, "I frame no hypotheses"

**but...** asserted "This most beautiful system of the sun, planets, and comets, could only proceed from the counsel and dominion of an intelligent and powerful being"

#### B. By late 18th century, origin of planetary system began to be explained without reference to design

##### Laplace (1749-1827)

advanced nebular hypothesis for origin of solar system

reply to Napoleon III's question about where God fits in to the origin of the solar system, "Sire I have no need of that hypothesis."

C. 20th century perspective—teleology excluded from most areas of science

e.g. Jacques Monod *Chance and Necessity*

“The cornerstone of the scientific method is the postulate that nature is objective. In other words, the systematic denial that 'true' knowledge can be got at by interpreting phenomena in terms of final causes—that is to say, of 'purpose'.”

e.g., Stanley Jaki, Catholic historian of science

“I want no part whatever with the position... in which science is surreptitiously taken as a means of elucidating the utterly metaphysical question of purpose.”

III. But ideas of purpose, intent or design are critical in current affairs, including some aspects of science

A. Presupposed in law

B. Statistical means for detecting fraud in science

psychology—Cyril Burt's “strangely consistent correlation of .771 between IQ scores for monozygotic twins reared apart was... probably fudged” (T. Rogers, 1995)

genetics—Gregor Mendel's classic data on color of peas

“...the general level of agreement between Mendel's expectations and his reported results shows that it is closer than would be expected in the best of several thousand repetitions. The data have evidently been sophisticated systematically.” (R.A. Fisher, 1936)

“Mendel's data were massaged” (D. Freedman et al. 1996)

IV. Can the distinction between design and non-design be drawn objectively?

A. Darwin *Origin of Species*

“Several eminent naturalists have of late published their belief that a multitude of reputed species in each genus are not real species, but that other species are real, that is, have been independently created... Nevertheless, they do not pretend that they can define or even conjecture, which are the created forms of life, and which are those produced by secondary laws. They admit variation as a [true cause] in one case, they arbitrarily reject it in another, without assigning any distinction in the two cases.”

B. Others claim intelligence can be objectively detected

e.g. SETI—Search for ExtraTerrestrial Intelligence, funded by NASA for approximately 20 years, 1970's - 1990's

e.g. Carl Sagan's *Contact*

What about the signal indicates design?

contingency  
complexity  
specification

On specifications

Statistical hypothesis testing: rejection region

Need for an intelligent receiver as well as an intelligent source

Examples

Case of Nicholas Caputo, Essex (NJ) County clerk (*NY Times*, 7/23/1985)  
(see David Moore, *Introduction to Practice of Statistics*, 1993, p. 376)

$$\begin{aligned} \text{Pr (at least 40 Demo in 41 draws)} &= {}_{41}C_{40} (1/2)^{40} (1/2)^1 + {}_{41}C_{41} (1/2)^{41} (1/2)^0 \\ &= .000000000018 \text{ or about 1 in 50 billion} \end{aligned}$$

# THE EXPLANATORY FILTER

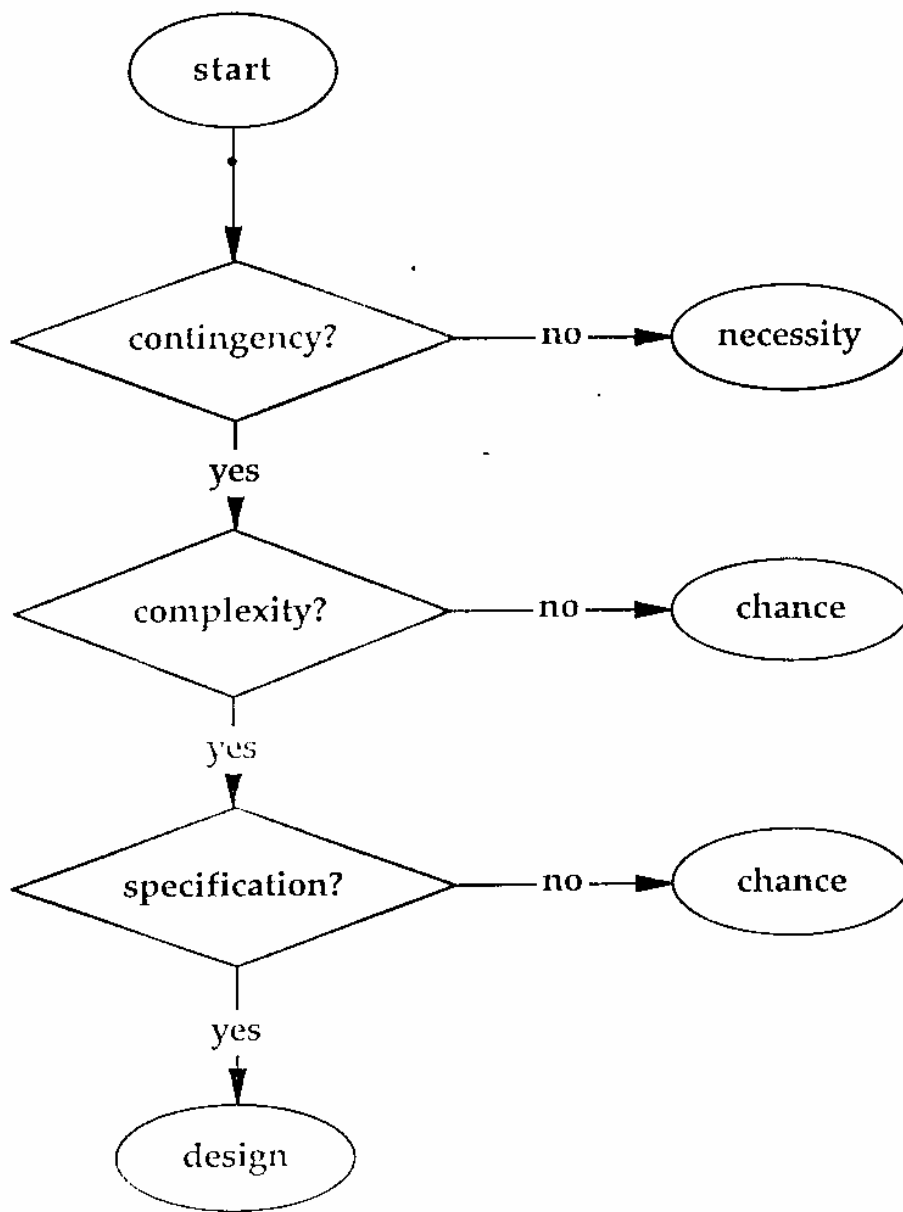


Figure 1.2

