

Elitist Language in Physics: The Self-Image of Physics

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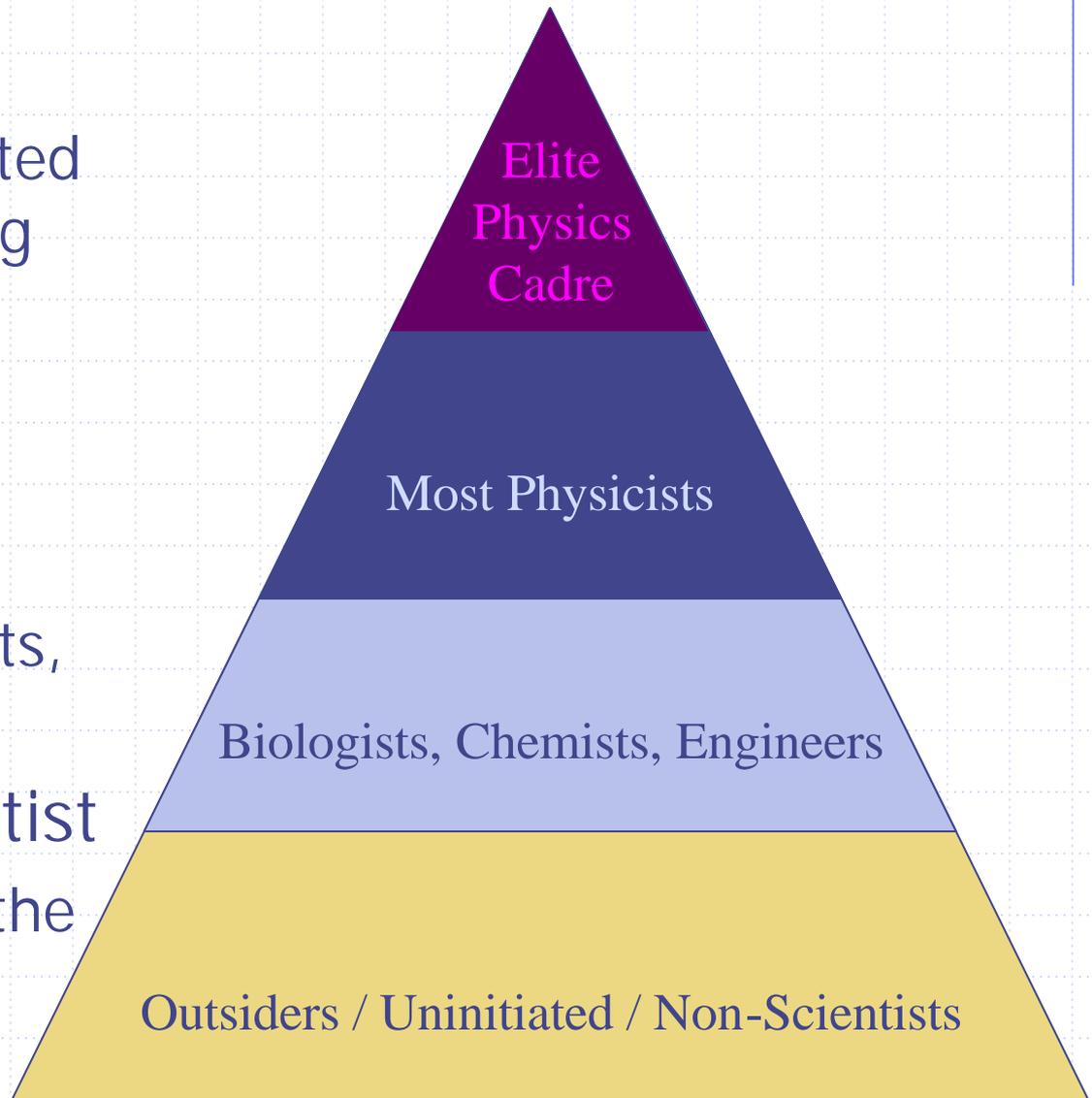
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The Question

- ◆ Physicists are often said to consider their science to be of greater importance than other sciences and other fields of endeavor
- ◆ Is there linguistic evidence of elitism in the proceedings of the leading national organization for physicists?
- ◆ The Resource – Archives of the National Academies (US)
 - Physical Sciences collection, American Institute of Physics (AIP)
 - Post-war time period (roughly 1945 to 1955)

Types of Elitist Language

- ◆ Intra-disciplinary
 - A cadre of respected physicists directing the future of the discipline
- ◆ Inter-disciplinary
 - Physicists versus biologists, chemists, engineers, etc.
- ◆ Professional-scientist
 - Scientists versus the outsiders / uninitiated



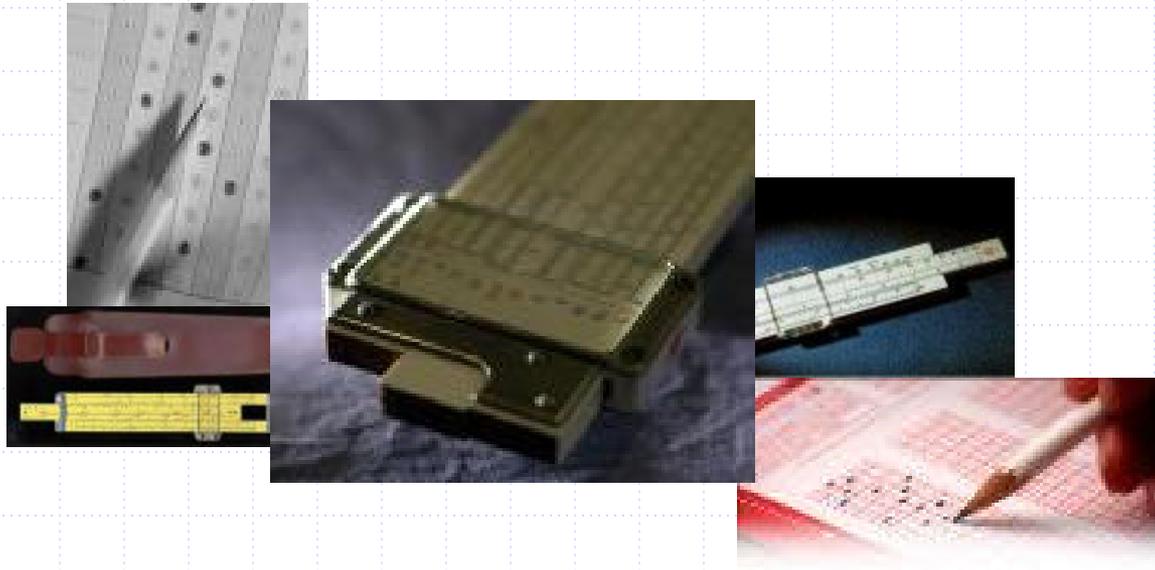
Creating *Physics Today*



Creating *Physics Today*

- ◆ “The magazine, in short, should be staff-written but, in part at least, the editors would serve as processors of material acquired from beyond the staff”.
- ◆ With “a slight alteration of values, and a slight debasement of quality, [...] a magazine generally of the kind proposed could reach a circulation of 100,000 or 200,000 or more”.
- ◆ “That [the journal] would be a public service, and hence is a professional obligation, is equally plain”.
- ◆ Seeking an editor, “one who can write well and interestingly, well above the quality commonly found in newspaper reporting, but in a form somewhat more understandable by the average scientific reader than is common or even desirable in a technical scientific paper”.

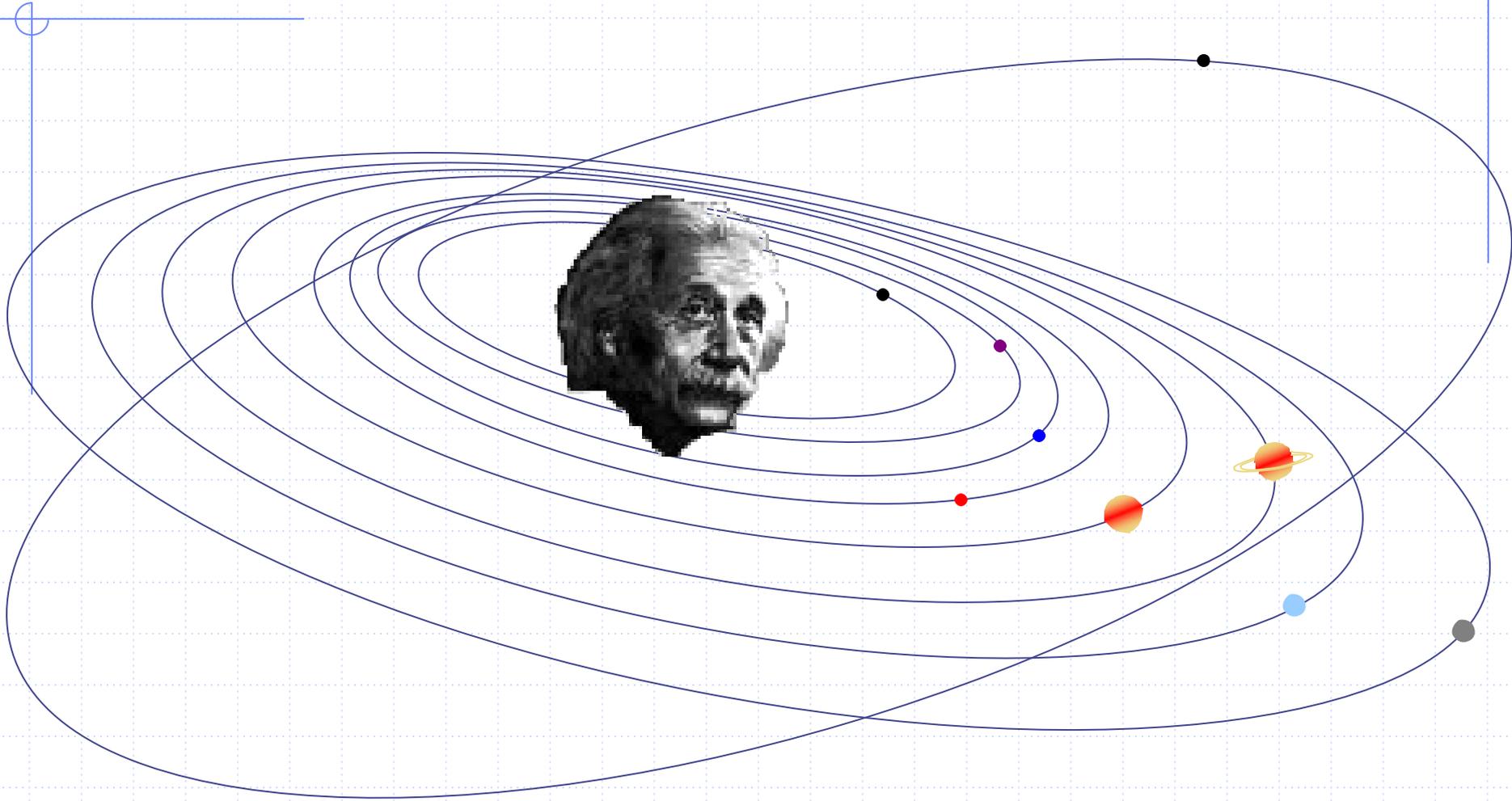
Defining the Physicist



Defining the Physicist

- ◆ To be a physicist, “a high level of general intelligence and the ability to apply this intelligence are prima requisites”
- ◆ Framing the debate during this period:
 - 1947, AIP report on Civil Service testing: “experience shows that the fixed educational requirement is of the utmost importance in reducing the number of applicants to reasonable proportions and preventing the entrance to the examination of persons who by reason of the *inadequacy of the examination process to determine real accomplishment* may succeed in slipping through, especially when ratification preferences are given to certain groups” [emphasis mine]
 - 1948, AIP writing to ETS, wondering: “if it would not be possible to devise some kind of achievement test which could be taken voluntarily by physics majors at graduation or possibly when they achieve graduate degrees which would have the same advantages as an accrediting system without any expense to the Institute of Physics”

Physicist-centric Model of the Solar System



Physicist-centric Model of the Solar System

- ◆ “Physics is in many respects the most fundamental of the sciences. It deals with the laws describing the behavior of matter, and the nature and transformation of energy. It has been called the king of the sciences just as mathematics has been called the queen. It is the foundation on which engineering and technology are built.”
- ◆ “If anything, my feelings are even stronger than those indicated by the rest of the Committee, regarding the need for participation of scientists in world problems. [...] International liaison at the scientific level puts men from different countries on common ground, since the scientific language is truly international. [...] Beyond assistance and collaboration on scientific matters, more general problems involving international relations might well be helped by participation of scientists.”

Physicist-centric Model of the Solar System

- ◆ “In time, the motives and the accomplishments of physicists will gain by their merit the understanding and approval of the public. But if it takes too long, there will be a dangerous interim famine of scientific leadership. The attack on ignorance and disease will be delayed and the forces opposed to human freedom may prevail.”
- ◆ “Physics, which has done so much to create the material aids to modern living, to establish an ethics and a culture founded on objective truth and even to preserve freedom itself, now ironically meets in the home and family disinterest, aversion and sometimes even apprehension.”

Conclusion

- ◆ Having heard physics identified as elitist by many sociologists (particularly Marxists and Feminists), finding some actual primary evidence is refreshing
- ◆ Further research
 - How much elitist language corresponds to elitist thinking versus language that is common amongst practitioners in a particular field?
 - ◆ Ethnographic techniques might be useful here, but measurement might be somewhat difficult
 - How much elitist language (and thinking) is due to the newness of the field?
 - ◆ Comparisons to high-tech workers