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Letters

Galileo: Seeing and perceiving

There is a simple explanation for the Galileo story ("Grabbing the Horns of Venus," SN: 11/26/83, p. 347) concerning the "horns of Venus" that fits Westfall's data yet exonerates Galileo of wrong-doing. The key is to realize that *seeing* (which employs the "eye of the forehead") is not *perceiving* (which employs the "eye of the mind"). I suggest that Galileo, having attracted the attention of Medici by observing the moons of Jupiter prior to March 1610, did the obvious thing to further his career after moving to Florence in September: He attempted to observe moons of other planets. His observations no doubt included Venus, but yielded no new moons. He therefore recorded nothing relevant to Venus in his notes. During his observations, he no doubt *saw* the phases of Venus, but did not *perceive* them to be of importance because he was looking for something else. Thus, he could write to a friend in mid-November that he had made no new discoveries, yet immediately *perceive* the importance of his unrecorded ob-

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servations of Venus in light of the new theoretical framework provided him in Castelli's letter of Dec. 5. He could then claim just priority for the observation of the "horns of Venus" on Dec. 11 (which Castelli certainly could *not* do), and truthfully claim to have been observing Venus for the previous three months. Then, as Westfall suggests, Galileo would have confirmed his unrecorded memories of the phases of Venus with new, recorded observations.

It is not by chance that it was Castelli rather than Galileo who hypothesized the existence of the phases of Venus, since Castelli was limited to using the "eye of the mind" while Galileo could use his telescope to vastly augment the "eye of his forehead." That does not, however, make the telescope primarily an instrument of patronage rather than astronomy in Galileo's hands, as Westfall concludes. Indeed, what Westfall fails to realize is that Galileo could not possibly *steal a discovery* from Castelli because neither Castelli's theoretical perception (which represented only a *possibility*) nor Galileo's observations (which were meaningless until interpreted) represent, in and of themselves, a

discovery. The discovery is the interpretation of Galileo's observations in light of Castelli's theory. It is an historical fact that Galileo was the first to put the observations and theory together (i.e. to both *see* and *perceive*). It is, perhaps, unfortunate that he did not give Castelli *some* credit for his perception, but since Castelli apparently did not complain, why should we?

Robert S. Root-Bernstein, Ph.D.
The Salk Institute for Biological Studies
San Diego, Calif.

... the concept of a heliocentric solar system was already old, and had been discussed and debated at length by scholars and astronomers, but no one had been able to see the "horns" of Venus, because no one had the tools and the craftsmanship to make a telescope. The idea of what to look for was already in the public domain, and the fact remains that it took the genius of Galileo to construct the instrument that tested the theory. Galileo's eye was the very first to spy the "horns" of Venus, and no one can deny him that honor.

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The fact that he announced the event of his observation in a cryptic message to a friend, is evidence that he had previously discussed the consequences of Copernican theory, and the expectation of finding that Venus displays phases similar to the phases of the moon. One does not send encoded messages, unless the recipient is in prior possession of the code....

Carl M. King
Sarasota, Fla.

... Assume that when the Castelli letter arrived, Galileo had been observing Venus for weeks, spellbound, trying to discover what other wonders the planet would reveal, but also afraid that he would not be able to keep the secret much longer. Galileo would then have been horrified by the fact that even his students could figure out the importance of observing Venus, and would have quickly protected his discovery by sending out the famous cypher.

Dr. Demetrios Matsakis
U.S. Naval Observatory
Washington, D.C.

Lies, lies

In reference to the article on lie detector policy ("Study Disputes Reagan Lie Detector Policy," SN: 11/5/83, p. 292) I'm afraid semantics once more raises its multiordinal head to obfuscate the issue by inappropriate labelling.

Speaking as a skilled operator, there is no such thing as a "lie detector" — there are only truth verification devices and techniques. But we're stuck with this erroneous label in common currency, and this is as misleading to the uninitiated as calling peak-traffic slow-down periods "the rush hours."

In my 30-odd years of experience with poly-

graphy and the Psychological Stress Evaluator, I've found that *skilled* operators can approach 100 percent accuracy in verifying true statements, and become adept at modifying questions which elicit ambiguous responses to back a specific falsehood into a corner. A checkmate is not a confrontation, or a kill; it is an inescapable admission of defeat. This is precisely why successful interrogations so often result in an admission of guilt, rather than a stubbornly entrenched denial.

And yet, although wildly disparate accuracy figures are continually tossed about in this old argument, rarely are they qualified by an accurate skill rating of the operator, which is the most critical issue. Anyone can buy a polygraph system and, after a rudimentary course of instruction, set himself up as a polygrapher—tantamount to taking a typing course in preparation to becoming a computer expert.

I suggest that anything as heavy as the establishment of a federal policy should be operators' qualifications in truth verification rather than ambiguous statistics on a questionable process such as "lie detection."

Charles Wallach
President, Behavioral Research Associates
Canoga Park, Calif.

In the Reagan administration's widening use of the polygraph to catch federal workers who breach security as well as in the increased application of the polygraph by business for general personnel screening, important psychological factors are totally left out from consideration.

Many law-abiding and upstanding people harbor skeletons of youthful forbidden actions or misdeeds in their mental closets. Many people also carry various burdens of unconscious

guilt feelings for even fleeting unacceptable wishes in their childhood.

For these reasons one subjected to a so-called lie-detector examination may react somatically — with signs of fear arousal, for instance — as if he were guilty of something committed recently, while this supposed "self-betrayal" may well have reference to a long-forgotten and supposedly buried past.

Zellig Bach, Ed.D.
Clinical Psychologist
Lakehurst, N.J.

Open season on craters

I wonder if McHone, Dietz and colleagues ("Search goes on for elusive crater," SN: 11/12/83, p. 312) have checked out the area of the Canada Basin. There's what looks like an obvious bull's-eye at approximately 81°N., 123°W. Or the seemingly extensive ray system emanating from approximately 78°N., 143°W. Then there's the wall about the Wrangel Abyssal Plain and another bull's-eye just northwest of that. On charts and maps of the region this doesn't all look like volcanism. The fact that these locations are so far north and under water, and maps and charts of the region are not that accurate, suggest to me the need for a close look.

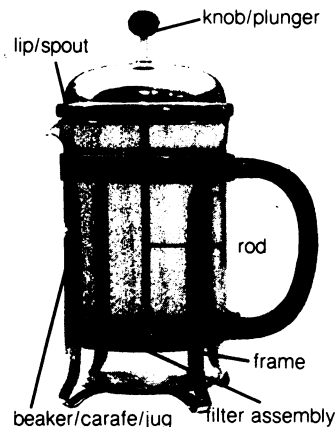
John F. Leahy
Chualar, Calif.

Cry babies

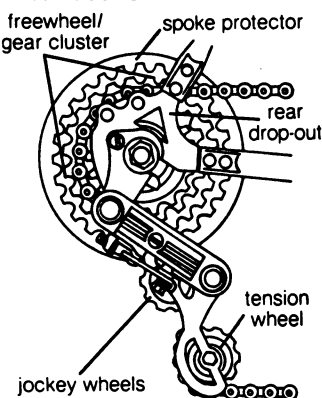
What kind of research project ("Baby cries: Whispers of future illness?" SN: 11/19/83, p. 327) is this anyway? A guy goes around snapping little babies with a rubber band to make them cry? I'd deck this marauder of the obstetrics ward if he snapped my kid, and I'm not a violent person. And can you picture trying to explain this project at a cocktail party? Snapping babies, really!

Lewis M. Cook
Concord, Calif.

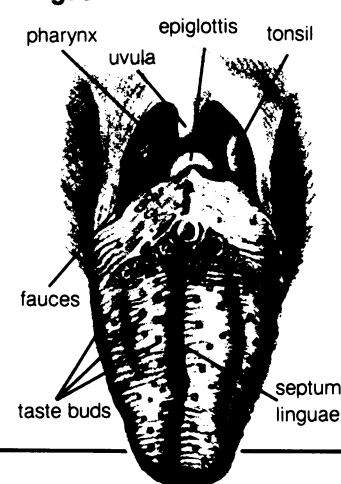
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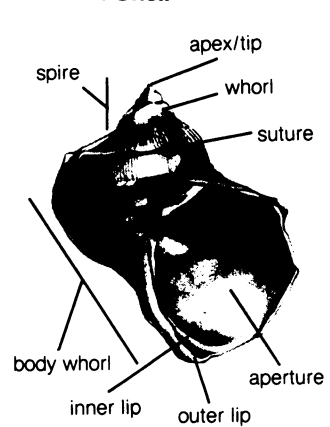
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Tongue



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