Abstract Submitted
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**Boys who pee the farthest have a large hollow head, a thin skin, and medium-size manhood.** DANIEL ATTINGER, Iowa State University, VINCENT LEE, Georgia Tech — Following a recent trend of scientific studies on artwork, we study here the thermodynamics of a jetting thermometer made of ceramic, related to the Chinese tea culture. The thermometer represents a boy who "urinates" shortly after hot water is poured onto his head. Long jetting distance indicates if the water temperature is hot enough to brew tea. Here, a thermofluid model describes the jetting phenomenon of that pee-pee boy. The study demonstrates how thermal expansion of an interior air pocket causes jetting. The validity of assumptions underlying the Hagen-Poiseuille flow is discussed for urethra of finite length. A thermodynamic potential is shown to define maximum jetting velocity. Seven optimization criteria to maximize jetting distance are provided, including two dimensionless numbers. The dimensionless numbers are obtained by comparing the time scales of the internal pressure buildup due to heating, with that of pressure relief due to jetting. Optimization results show that longer jets are produced by large individuals, with low body mass index, with a boyhood of medium size inclined at an angle $\pi/4$. Analogies are drawn with pissing contests among humans and lobsters. The study ends by noting similitudes of working principle between that politically incorrect thermometer and Galileo Galilei's thermoscope. [1] V. Lee and D. Attinger, "Thermodynamics and historical relevance of a jetting thermometer made of Chinese zisha ceramic," Sci Rep, vol. 6, p. 28609, 2016.

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