

Satire in Science

Joke, Education, and Inquiry

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Abstract

Satire in science is usually seen as joke and sometimes as a vehicle for teaching. This note distinguishes three uses: joke, education, and inquiry. Inquiry comes in its own three forms: satire can estrange, it can construct mechanisms, and it can stress-test methods. Since satire resists definition, the note begins with the question of how it is recognised at all.

1 Introduction

Much of what scientists do lies before observation, measurement, and proof. A hypothesis must be imagined before it can be tested; a mechanism must be noticed before it can be measured; a counterfactual must be construed before it can discipline a claim. Pure theory, analogies, simulations, and thought experiments all belong to this preparatory region of inquiry. None of them are evidence, but they help decide where and how evidence matters. This note asks whether satire occasionally belongs in that company.

The most natural reasons a researcher might write satire are that it may entertain or teach, the latter perhaps the more profound of the two. Both varieties are familiar and largely uncontroversial. But can satire in science also be a vehicle of inquiry? The claim

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seems to run against the grain of our understanding of how inquiry in science operates. How can anything earn that label if it is neither derived from an axiomatic framework nor wrung from rigorous data analysis?

I shall argue that satire can contribute to scientific inquiry in three different ways: through (i) estrangement, elucidating practices and systems in a way that improves a scientist's understanding and suggests the desirability of further inquiry; through (ii) construction, suggesting mechanisms that might be at play and would be testable; and through (iii) stress-testing, documenting flaws in scientific practice.

In the remainder of this note I will first ask what satire is, and then develop a taxonomy for its use in science, offering examples for all its uses.

2 What Is Satire?

Before asking what satire does in science, it seems prudent to ask what satire is. The honest answer resembles Justice Potter Stewart's famous concession about a very different genre: he could not define it, "but I know it when I see it" (Stewart, 1964). Satire, too, resists necessary and sufficient conditions. One knows it when it walks through the door.

Still, two extreme forms can be distinguished. At one pole sits what German usefully calls *Realsatire*: the material is entirely real, and nothing in the text marks it as satire. Whether it is satire is decided in reception alone. At the other pole sits counterfactual satire, which carries an objective marker: the world it depicts is not real. Vampires roam the macroeconomy, polygons court line segments, candlemakers petition against the sun. Nobody can mistake these worlds for reports.

Between the poles, recognition does real work—and it can fail in both directions. A text can become satire in reception although its author was serious, and it can fail to be recognised although its author meant nothing else. Both cases will appear below. The two forms, moreover, are orthogonal to the three uses this note distinguishes: joke, education, and inquiry can each operate at either pole, though inquiry, as we shall see, has a certain affinity to the counterfactual.

3 Satire as Joke

Satire as joke for its own sake is an epistemological null—yet there is a surprising amount of it. The *Journal of Irreproducible Results*, founded in 1955, and its successor the *Annals*

of *Improbable Research*, together with the Ig Nobel Prizes awarded annually since 1991, form a standing institutional home for scientific comedy (Abrahams, 2009).

But mainstream journals have also served as outlets for jokes. The *Journal of Political Economy*, a leading journal in economics, not only featured for around two decades historical and literary quotes with satirical twists on its back cover; it also published joke articles (Blinder, 1974; Bergstrom, 1976). Blinder (1974) offers an economic theory of tooth brushing, complete with a mock empirical test; Bergstrom (1976) tackles the economic theory of sleep and shows that the average man spends exactly 9.231 hours in bed.

Much of this is simply funny, and means to be. But even this ecosystem does not rest content with the laugh. The Ig Nobel Prizes are given, in their own formula, for achievements that “first make people laugh, and then make them think.” That phrase marks the boundary this note is concerned with. The joke is the entry point; the question is what lies past it. The sections that follow describe what does.

4 Satire as Education

The most familiar use is transfer. An insight already exists, and satire helps it travel—into a lecture hall, a textbook, a public that would not read the original. This use needs little defence, because it changes nothing about the insight itself; it only changes who encounters it and how readily. A good deal of celebrated scientific satire belongs here rather than under inquiry proper.

The most famous and surely most impactful example in this category is Galileo’s *Dialogo*, in which three characters discuss over four days the geocentric versus the heliocentric world views (Galilei, 1632). Galilei’s dramatic form is one of much satirical force, beginning with the name he chose for the geocentric speaker—Simplicio, bound to lose the argument. The book spent over two centuries on the *index librorum prohibitorum*.

Voltaire’s *Micromégas* is closely related to the *Dialogo* (Voltaire, 1752). Among the earliest works of science fiction, it follows an extraterrestrial visitor’s encounter with the earth and its new science, and in doing so affords the reader an unusually easy way into the Copernican revolution—and, with it, the deflation of the idea that man sits at the centre of the universe.

An early example from the social sciences is Bastiat (1845). Bastiat’s petition of the candlemakers asks the government to block out the sun to boost demand for the local

French product, the candle, that currently faces unfair competition. His argument against protectionism—that shielding a producer from cheaper competition transfers wealth to it at a larger cost to everyone else—was already well understood. Bastiat discovers nothing; what he does is build a world in which the logic, asked to defend the candlemakers against the unfair competition of the sun, becomes impossible to take seriously.

5 Satire as Inquiry

Satire as inquiry works in three ways. It can estrange familiar practices or theories, construct mechanisms that might not have been seen, and stress-test the authority of methods or institutions.

5.1 *Satire as Estrangement*

A satire must distort, but distort recognisably: strange enough to loosen ordinary categories, coherent enough to be reasoned with.

Miner (1956) is a prominent example from the anthropology literature. He studies a North-American tribe, the Nacirema, and their body rituals. Bathrooms, medicine cabinets, and dentists become shrines, charm-boxes, and holy-mouth-men—exposing ethnocentrism and Western vanity. This is neither joke nor mere education. Rather, it provides a foil for a fresh view on the difficult relationship between the observer and the observed.

Leijonhufvud (1973) does something not too dissimilar for economics, picking up Miner’s tribe language. The tribe he studies is the Econ tribe “occupying a vast territory in the far North”, a land that “appears bleak and dismal to the outsider”—in which status is won by producing “modls,” many of little practical use. Like Miner’s piece it is not just a joke, and it is even further away from transfer. It is targeted at the insiders and invites them to reflect.

Stigler’s conference handbook sits in the same vein, exposing how seminar discourse is often reduced to a finite repertoire, beginning with the objection that Adam Smith said it already (Stigler, 1977). His piece reveals how much of scholarly criticism is mere ritual, and invites other modes.

Krugman’s theory of interstellar trade (Krugman, 2010) belongs here too, although for subtly different reasons. By working out how interest charges should be computed for goods moving near light speed, he shows that existing trade and finance theory is general enough to survive even a relativistic setting and still yield, in his phrase, “two useless but

true theorems”. The achievement is real, but it is an achievement about the portability of a known apparatus, not the discovery of a new mechanism—the theme we turn to next. (Rumour has it that Krugman was not entirely joking, that he took the exercise as a genuine demonstration of his theory’s reach. If satire is partly decided in reception, this need not disturb the classification.)

There are, of course, always some borderline cases, and a particularly interesting one is McAfee (1983), who studies, in the vein of Fogel (1964), a counterfactual history of the USA. While Fogel asked what would have happened if the railways had not been built, McAfee asks the more fundamental question of what would have happened if Columbus had not discovered America. McAfee’s paper can be read as a pure joke, but it can also be read as an homage through estrangement, and it might even be read as falling under the stress-test category introduced below. As with many of these works, it is ultimately in the eye of the beholder.

5.2 Satire as Construction

Because a satirical world must hold together, its author is forced to specify what holds it together—the mechanisms at work. And sometimes these proposed mechanisms might not have been as clearly proposed before.

Mandeville (1714) must rank as one of the prime examples of satire as construction. In his fable of the beehive he posed a question social theory would revisit for centuries: when do private motives generate public order, and when destroy it? One need not accept his sharp moral conclusion—that vices might be preferable to virtues—to see the larger contribution: the fable opened a question rather than illustrating a settled answer.

Snower (1982) also tackles good and evil, by studying a macroeconomic model with humans and vampires and deriving the non-obvious conclusion that the socially optimal number of vampires to destroy is not all of them. Evil may do some good—a proposition that invites analysis.

Abbott (1884) studies a two-dimensional world where females are line segments, males polygons, and the narrator is a square—providing food for thought in several dimensions: gender relations, systems of power, the limits of perception. Given its richness, it is not surprising that it triggered much follow-up work.

Parkinson (1955) is concerned with the more mundane topic of bureaucracy, and is a satirical work that has been stunningly influential. He does not merely joke that

bureaucracies are inefficient; he redescribes bureaucracy as a growth process in which officials multiply subordinates and work expands to fill the available time. This converts a complaint into a portable proposition that can be formalised and tested.

5.3 *Satire as Stress-test*

A third sub-move turns absurdity not on the world but on a method or institution, to test whether it deserves its authority.

Sokal (1996) probably splashed the biggest waves in this category. By getting a spoof article, proposing that quantum gravity is a social construct, accepted in the reputable journal *Social Text*, he very publicly questioned the standards of rigour in peer review. The editors, one might say, failed the Stewart test: no counterfactual marker gave the game away, and recognition did not step in.

Smith and Pell (2003) posited that randomized controlled trials are the gold standard and studied the effectiveness of parachutes in preventing death. They concluded that the usefulness of parachutes cannot be reliably ascertained in the absence of any meaningful RCTs. A little over a decade later Yeh et al. (2018), finally, provided an RCT on how parachutes prevent death—by studying people jumping out of an aircraft on the ground. They could not find a difference between the efficacy of parachutes and ordinary backpacks.

The last example for satire as stress-test must be Bennett et al. (2010) and their dead salmon—which duly won an Ig Nobel Prize, a joke and a profound stress-test in one, making a lesser-known statistical problem in neuroscience impossible to miss. It is also the piece in this note that comes closest to *Realsatire*: the scanner was real, the salmon was real, the significant voxels were real. The world supplied the joke; the authors merely refrained from correcting it away.

6 Conclusion

Satire cannot estimate an effect, identify a cause, or prove a theorem. Instead it jokes and elucidates. But sometimes it is also inquiry—treading new ground, serving science in the same way as thought experiments or theory do.

Satire cannot just pose new questions to contemporary readers; it can help shape long-lasting trajectories in science, be it in the form of an Aristotelian Simplicio, a beehive, or a dead salmon. Nor does it need to announce itself. Sometimes it carries its counterfactual marker openly; sometimes it must simply be recognised when it walks through the door—

and sometimes, as the editors of *Social Text* learned, it is not.

In my own field—economics—satire thrived in the 1970s, foremost in the *Journal of Political Economy*. I feel a certain kind of sorrow that this tradition got lost.

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