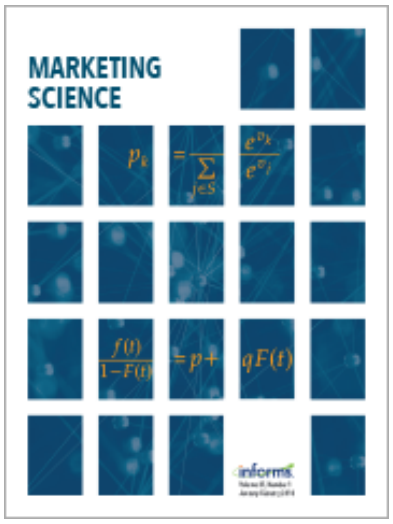

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Rejoinder

Robust Prediction and Unrealistic Assumptions

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In the response to my commentary on his 2007 editorial entitled "It's the Findings, Stupid, Not the Assumptions," Steven Shugan raises a number of thought-provoking ideas. In this rejoinder, I focus on three issues that Shugan and I hold the most divergent views.

First, while Shugan uses the terms "realistic" and "realism" in several different meanings, I define the realism of an assumption as the extent to which it corresponds with the real world. Second, Shugan makes a strong claim that predictions can be objectively evaluated whereas assumptions cannot. I refute his claim by arguing that testing predictions and testing assumptions follow the same research process of checking whether the proposition concerned corresponds with reality. Third, Shugan maintains that given predictive accuracy, assumptions need not be realistic. I hold an opposite view for the obvious reason that the same prediction may be generated by completely different mechanisms, which in turn are based on different assumptions. Last but not least, the example of socialist economic planning shows that unrealistic assumptions can generate dangerous theories.

Key words: assumptions; prediction; realism; mechanismic explanation; theory testing
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In the response to my commentary on his 2007 editorial entitled "It's the Findings, Stupid, Not the Assumptions," Steven Shugan (2009) raises a number of thought-provoking ideas. Because of space limitation, here I discuss only the issues that Shugan and I hold the most divergent views—the meaning of realistic assumptions, the objective evaluation of assumptions, and the relationship between predictive accuracy and the realism of assumptions.

What Is Meant by Realistic Assumptions?

Realistic assumptions are not equal to "popular assumptions," a term used by Shugan (2009). Confusion arises because Shugan uses the terms "realistic" and "realism" inconsistently, as illustrated by his statement: "The term 'unrealistic' sometimes means personally disliked" (2009, p. 991). As mentioned in my commentary, for the purpose of our discussion, an assumption is considered unrealistic if "it is believed to be either false or highly improbable on the available evidence" (Nagel 1963, p. 214). That is, the realism of an assumption refers to the extent to which it corresponds with the real world. Shugan's claim that "[t]he theory's domain determines whether the assumptions are realistic" (2009, p. 997) is therefore problematic—only reality can determine the realism of an assumption.

According to this definition of realistic assumptions, it is inappropriate to talk about "unrealistic non-Euclidian assumptions" (Shugan 2009, p. 991). First, the basic propositions on which a geometrical system is built are called axioms, not assumptions. Second, and more importantly, geometry is not an empirical science. Geometry—"no matter whether it is of the euclidean or of a non-euclidean variety—deals with no specific subject-matter; in particular, it asserts nothing about physical space" (Hempel 1945, p. 12). While advocating that "judgments regarding inadmissibility should avoid appeals to realism," Shugan makes a contradicting claim that "the assumption that there are 250 days in a Julian calendar year is inadmissible" (2009, p. 993). That assumption, which does not correspond with reality, is simply unrealistic.

Can Assumptions Be Evaluated Objectively?

Shugan (2009) continues to make a strong claim that predictions can be objectively evaluated whereas assumptions cannot. This claim is inconsistent with facts. For example, Copernicus implicitly assumed that planetary orbits were circles. Based on Brahe's data, Kepler worked out the elliptical orbit of Mars and objectively proved that Copernicus' assumption was unrealistic (Miller 2008). Moreover, testing predictions and testing assumptions follow the same research process of checking whether the proposition concerned corresponds with reality. If the realism of assumptions "is subjective, opinionated, and in the eye of the beholder" (Shugan 2009, p. 994), so is the

accuracy of predictions, which Shugan treasures so much.

Shugan (2009) rightly points out that a theory limits the domain where its assumptions must hold. Although opportunism, for example, is a broad concept, transaction cost economics relates opportunism to the choice of governance structures, and it would be more appropriate to test opportunism in this context (see Tsang 2006). That said, sometimes assumptions can be tested on their own. For example, Eliashberg and Shugan (1997) assume that the greatest impact of a movie review is during the first few weeks after the review appears. This assumption can be tested independently of the theories of film critic as influencer versus film critic as predictor.

Given Predictive Accuracy, Need Assumptions Be Realistic?

Shugan (2009) gives a clear answer "no" to the above question, whereas to me, the answer is "yes" for the obvious reason that the same prediction may be generated by completely different mechanisms. Consider the assumption of transaction cost economics that managers utilize a transaction-cost-economizing calculus in making decisions concerning modes of governance (Williamson 1985). Buckley and Chapman's (1997) study asked managers directly about the internalization and externalization of corporate activities and found no evidence of transaction cost economizing. Suppose that their study is rigorously replicated in other contexts (see Tsang and Kwan 1999), and similar results are obtained. Does such evidence, which falsifies the transaction-cost-economizing assumption, really matter as long as governance structures observed in the real world are consistent with the prediction of transaction cost economics? It does matter because the observation can be the outcome of natural selection instead of managerial choice proposed by transaction cost economics. For the former approach, firms engage in a random series of configurational changes, some of which are by accident transaction cost reducing while others are not. Firms that happen to arrive at a low transaction cost configuration will succeed relative to those that do not (Buckley and Chapman 1997). That is, governance structures that are more efficient for economic exchange will supplant less efficient ones, with the result that observed structures are generally consistent with the logic of transaction cost economics regardless of whether the choice of such structures was based on transaction-cost-economizing decisions (Robins 1987). The issue here is that the natural-selection approach invokes a mechanism very different from that of the managerial-choice approach. In other words, a theory with a wrong mechanism can produce accurate predictions.

To summarize, assumptions that constitute the foundation of the mechanismic explanations provided by a theory have to be realistic, although certain kinds of assumptions, such as negligibility and heuristic assumptions (see Musgrave 1981), need not be realistic.

The Perils of Unrealistic Assumptions

Shugan (2009) has an interesting discussion of the failure of centrally planned economies, without mentioning that some of the core assumptions of socialism, on which central economic planning is based, concern motivational dispositions such as altruism and obedience to the socialist state (Balcerowicz 1996), as well as egalitarian reward leading to a higher level of motivation (Galbraith 1996). After decades of socialist economic experiments conducted by various regimes in different parts of the world, it is clear by now that these assumptions are less realistic, if not downright unrealistic, than the core assumption of capitalism that people are motivated by self-interest. This example demonstrates that theories based on unrealistic assumptions can lead to not only false predictions but also widespread human suffering. While Shugan's claim that unrealistic assumptions "breed great new theories" (2007, p. 449) remains to be substantiated, the fact is, unrealistic assumptions can generate dangerous theories.

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