



FROM MY PERSPECTIVE

A new methodology for anticipating STEEP surprises[☆]Oliver Markley^{*}

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ABSTRACT

In technological forecasting and futures research on social change, the term *wild card* (a.k.a. *disruptor* or *STEER surprise*), traditionally refers to a *plausible future event that is estimated to have low probability but high impact should it occur*.

This article introduces:

1. A *Type II Wild Card*, defined as having *high* probability and high impact as seen by experts if present trends continue, but *low credibility* for non-expert stakeholders of importance.
2. A four-level typology of wild cards, leading to a systematic methodology for monitoring the emerging awareness and credibility of high probability disruptors and for assessment of stakeholder-specific views about them.

An informal pilot test of the methodology both indicated that the approach has practical value, and highlighted the importance of highly plausible tipping points which could rapidly lead to massive disruption, either toward collapse or reformation in the complex adaptive systems (CAS) making up human civilization.

For reasons of historical continuity, wild card-related nomenclature is used throughout the majority of this article although the term STEER Surprise is advocated for further work. (STEER being a frequently used acronym denoting five conceptual sectors of importance.)

Suggestions for further work include:

- Research on how to diminish the discounting of Type II phenomena by institutional leaders
- Monitoring of transitions in the perceived credibility of critical Type II STEER Surprises by thought leaders
- A Snowball Survey of wisdom leaders having multidisciplinary expertise from all walks of life to identify specific Type II possibilities (especially positive ones), they see as having greatest importance
- A Cooperative Clearinghouse on STEER Surprises for sharing of intelligence on highly probable/highly disruptive events, together with plausible impacts and proactive policies.

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1. Introduction

In what has become a truism in social change work, the 18th century German philosopher, Arthur Schopenhauer, said, “Every truth passes through three stages before it is recognized. In the first, it is ridiculed. In the second, it is opposed. In the third, it is regarded as self-evident”. Whether or not one accepts the tongue in cheek precept known as *Dator’s Law*—that any useful

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statement about the future should at first seem ridiculous—it is certainly true that research on alternative futures *must* include plausible future possibilities that strain or exceed conventional understanding. Systematically assessing the credibility of fringe—but well-founded—ideas about the future is an essential way to help navigate the highly turbulent “white waters” of disruptive change involving complex, adaptive systems (CAS), that typify our time in history.

The purpose of this article is both to introduce a new methodology for improved intelligence on the emergence of highly disruptive surprises (“wild cards”), having initially low credibility for most observers, and to illustrate how this approach can be used regarding pressing challenges of the decade ahead. For reasons of historical continuity, the term wild cards will be used throughout this article, although due to feedback from a pilot test, it is proposed that STEEP surprises be used instead of “wild cards” for continuing work.

We begin with an introductory overview, after which the methodology is developed in detail, a pilot test is described, and implications are discussed, including suggestions for further work and a concluding summary. A substantively-oriented companion article to this more methodologically-oriented one is “Research and Action Toward the Upside of Down” (Markley, forthcoming [1]). Being drawn from the same research base, a few essential details are common to both articles, but otherwise both stand alone.

2. Type II Wild Cards and beyond: needed categories of foresight

In long-range forecasting and policy-oriented alternative futures research, professional futurists traditionally speak of *wild cards*—defined as possible events that are considered to have a low probability of occurrence, but a very high impact (often negative) if they were to occur. Arguably the definitive writing on wild cards, thus far, is *Out of the Blue: Wild Cards and Other Big Future Surprises: How to Anticipate and Respond to Profound Change* (1997), by John Petersen [2]. The thrust of Petersen's most recent (2008) book, *A Vision for 2012: Planning for Extraordinary Change* [3], strongly motivated the research reported here. A more recent (2009) article, “Risks and threats to civilization, humankind, and the earth”, by Joseph Coates [4], is also a definitive piece on this general topic, although it uses “catastrophe” as the preferred term.

For purposes of improved intelligence on potentially disruptive phenomena in highly turbulent environments, I believe it is critically important to now expand the definition to embrace four conceptually distinct types of wild cards that make feasible an intelligence methodology for tracking the emergence of “Type II Wild Cards” that have arguably *high* probability if present trends continue, but which, for various reasons, are not credible to most observers:

- Type I Wild Card: low probability, high impact, high credibility
- Type II Wild Card: high probability, high impact, low credibility
- Type III Wild Card: high probability, high impact, disputed credibility
- Type IV Wild Card: high probability, high impact, high credibility.

Another conceptual category—low probability/high impact/low credibility—of course, exists, but there is a sub-infinity of such possibilities. Thus, this category is judged by this author as having little practical value, while respecting the fact that others disagree. Further, it is interesting to note that the term *Black Swan*—which rightly or wrongly has been seen by some reviewers as applying to this situation—has become something of a cliché in certain intellectual circles [5].

We will first focus on the Type II phenomenon, and then move on to the general typology.

3. Under-estimation of global warming and its impacts as a climatological Type II Wild Card

As an historical example of a Type II Wild Card, consider the following story stemming from a rush research project to do a “Brief Assessment of the Very-Long Range Impacts of the CO₂ Effect” that I led at SRI International in 1976.

By doing a quick snowball survey, my team within the short space of two weeks had obtained most of the major findings on this topic—both published and not yet published—and many of the articles slated to be included in a major National Academy of Sciences monograph to be published within the year [6]. Using the modeling expertise of SRI ecologist, Buford Holt, we then expanded the models currently being used for climate dynamics simulation in ways consistent with futures-oriented general systems thinking. In so doing, we determined that there were a variety of causal “feedback loops” not being reflected in the models of leading climatologists, with more positive than negative ones, suggestive of “deviation amplifying” tendencies. Moreover, from a simple application of systems dynamics thinking, we determined that severe disruptions of customary weather cycles and patterns could be expected to occur as a function of the *rate of increase* in atmospheric CO₂, producing major impacts much earlier than effects associated with maximum CO₂ buildup, which is what the then extant climatology literature mostly focused on.

Recent findings [7], give credence to our forecast which was earlier published in this journal [8]. Thus, with the benefit of hindsight, our forecast, especially about the early onset of weather disruption, can be considered a valid Type II Wild Card (although global dimming is probably an even more robust cause of weather disruption than global warming).

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