Talking Popper and performing Feyerabend. Why epistemology is unpopular among social scientists.

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1. Introduction

A couple of years ago, three scientists set out to test the popular assumption that the effect of a speech is dominated by body language and nonverbal cues. They prepared and conducted two multi-method experiments, which led to two rather unexpected findings (Jackob, Roessing, & Petersen, 2011):

1. The effect of the stimulus speech was clearly dominated by its content, not by the performance of the speaker.
2. Nonverbal cues do not always enhance the effect on the reception of a speech by the audience. Vocal emphasis as well as gestures can negatively influence the reception of certain aspects of a public speech.

When the three scientists tried to publish their results, the problems began. In addition to the usual and often justified critique by the reviewers it became clear that some people, fellow scientists, have difficulties to accept the rejection of hypotheses as scientific growth. One editor of a quite distinguished journal from the field of communication and media research wrote in the letter refusing to even forward the paper to the reviewers:

"[Name of the journal] requires explicitly stated hypotheses with a clear direction of relationship, and the result section should clearly indicate whether these hypotheses are supported."

Admittedly, "whether these hypotheses are supported" includes the possibility of failure. However, the perspective of this advice seems not entirely compatible with the widely accepted Critical Rationalism in the tradition of Karl Popper and others: Supported hypotheses are a fine thing, corroborating what we regard to be knowledge at a given time. But real growth of scientific knowledge comes from the unexpected, which in most cases is an observation not supporting any explicit or implicit hypothesis (Popper, 2000).

2. Epistemology and research practice

Many textbooks of the empirical social sciences recommend some form of falsifiability as the epistemological basis of, at least, quantitative research. Usually, Karl Popper's "Logic of Scientific Discovery" (Popper, 2002) is referred to as the standard work of contemporary epistemology (Garrat & Li, 2006).[1] Unfortunately, Popper's methodological as well as sophisticated Critical Rationalism is often confused with dogmatic fallibilism, making it

[1] Examples from German textbooks can be found in Schnell, Hill, & Esser, 2008, pp. 53-72; Bortz & Döring, 1995, p. 5.

difficult for students of methodology to understand the scope and the objective of this epistemology (Roessing, 2000 and [in German] 2009, pp. 36-41). However, if Popper's approach is the epistemological basis of empirical, quantitative research, it should be mentioned, or at least practiced in many of the publications in journals of distinction. If that is the case, is analyzed in the next section of this paper, using a small and certainly not representative analysis of two issues of top journals from the field of communication research.

2.1 International Journal of Public Opinion Research (IJPOR), issue 1, 2012

Of four full papers of this issue, one is an exploratory study with no "explicitly stated hypotheses". This is okay, not only given the underdeveloped density of established knowledge in the field of public opinion research. It is also okay with Popper's philosophy. It is a common misunderstanding of Critical Rationalism that it requires fully developed theories before empirical testing can begin. Implicit expectations will suffice (Roessing, 2000).

Another paper is testing six hypotheses of which five are completely and the sixth is partly confirmed. This is no surprise, given the trivial nature of some of the hypotheses tested: "Exposure to a presidential speech addressing a policy issue will increase an individual's perception of the importance of that issue" (Villalobos & Sirin, 2012, p. 24). This hypothesis is corroborated by the study – but what does mankind learn from that?

As a matter of course, corroborations are important for the formation of a stable knowledge base especially in younger disciplines. But scientific progress is usually made by falsification of simple conjectures (where everyone expected an outcome that did not occur) or corroboration of bold conjectures (where again everyone expected an outcome that did not occur) (Chalmers, 1999, p. 79). "News is what is different" is a dictum in journalism research. Following this, scientific news can be defined as "what is different from common expectations". In contrast, corroborating what is widely known, can be regarded neither as scientific nor as news.

The third paper in the first issue of the IJPOR in 2012 confirms the hypotheses that (1) "Exposure to favorable news coverage of a candidate positively affects evaluations of his/her campaign" and (2) "Exposure to favorable horserace news coverage of a candidate positively affects expectations of winning the election" (Boomgaarden, Vliegenthart, & de Vreese, 2012, p. 47). The question at hand is: Has there ever been any reason to believe that these hypotheses would *not* be confirmed?

The last paper states six hypotheses and the empirical study yields mixed results. However, little attempt is made by the authors to extrapolate their findings to general knowledge about political communication.

2.2 Journal of Communication, issue 1, 2012

The first 2012 issue of the Journal of Communication contains ten research articles. The first paper is an attempt of "metaphorically conceiving of communication as a form of ventriloquism" (Cooren, 2012, p. 1). Its aim and methods are of a non-empirical nature, thereby escaping the reach of Critical Rationalism as well as the aim of this analysis. One paper presented a rather descriptive secondary analysis and two papers were empirical but exploratory so the authors correctly refrained from stating explicit hypotheses. In the remaining six papers, all in all 29 hypotheses were tested, 19 of them (mostly) confirmed, five refuted and five hypotheses received only partly conformation from the data.

Among the conformed hypotheses is one that addresses the perception of entertaining media: "Suspense will be positively associated with enjoyment" (Krakowiak & Oliver, 2012, p. 121). The opposite finding would have been unexpected – and big news to the entertainment industry.

2.3 Confirmation bias

The findings of the present paper's small study are similar to what is known as the "file-drawer-effect" (Scargle, 2000). Statistically significant results often have a greater probability to be published than non-significant ones. And obviously there is a chance that confirmations are more often reported than refutations – at least in some journals from the field of communication research. It has been proposed in the literature that the differences between Popper's principle of falsificationism lead researchers to resort to somewhat creative, and often biased, interpretation of theories, hypotheses and empirical data (MacCoun, 1998, p. 276). This leads to two questions: What makes researchers uncomfortable with Critical Rationalism, and why turn some researchers to a rather free interpretation of epistemology while textbooks keep emphasizing the importance of Popper's ideas? Why does so much of the practical research resemble Feyerabend's (2009) freestyle epistemology more than Popper's Critical Rationalism?

3. Critical Rationalism and practical research in the social sciences

Difficulties in the application of Critical Rationalism to practical research are often rooted in special qualities of the social sciences.

(1) Critical rationalism has been developed from the perspective of the natural sciences, especially physics. Unlike physicists, social scientists have to cope with an ever changing reality. Social life is not invariant over *time*. Hypotheses tested on the occasion of one election campaign may prove totally inadequate for the next one. Social life is also not the same in every *place* (as it is the case with most laws of physics). Hypotheses falsified in an experiment conducted in the U.S. may be completely valid in rural areas of China (Roessing,

2006). Nomothesis for the realm of social life is difficult; most theories are of *middle range*, a term coined by Robert King Merton.

(2) Even well corroborated theories on social issues are prone to falsification by irregular observations. There is almost always a surprise during an election campaign or a group of people who do not behave as they are expected to. Social scientists are confronted with the unexpected to a far greater extent than many of their colleagues from the natural sciences (Roessing, 2006).

(3) An inductive approach (rather than the deductive one demanded by critical rationalism) is inherent to many research projects in the social sciences. This holds especially for non-academic research, e. g. marketing surveys.

Regarding the consequences for social science methodology, the following issues should be taken into consideration by researchers and academic teachers as well as by publishers of scientific results.

(1) Nomothesis is already difficult in the social sciences, but is restrained even more by a lack of attention for the systematic development of theories as proposed by critical rationalism. It is more important to improve a theory by clarifying uncertain aspects of it, than to repeatedly confirm it.

(2) Social sciences are especially prone to influence by extrinsic interests and ideology (MacCoun, 1998). The deductive approach of critical rationalism helps to minimize (or to shed light on) such influences.

(3) Induction seems to be more appealing than fallibilism to many people. It tempts researchers to believe that the corroboration of a rather simple hypothesis (employing a test with some “Midwestern university undergraduate students”) had significant scientific meaning.

Eventually, this paper suggests that peer reviewers should consider rejecting a methodologically sophisticated study (probably making use of the latest multidimensional mathematics) if it does nothing more than once more confirm a trivial and already well corroborated hypothesis.

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