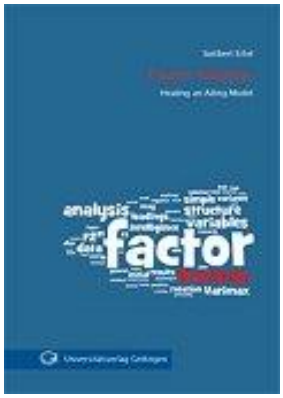

Introduction

Homepage owner's self exploration

1. **Why did I write "Factor Analysis. Healing an Ailing Model".**
   Because FA (factor analysis) is an ailing model that needs cure.

2. **What was wrong with FA?**
   I felt factors were not what they were deemed to be.

3. **What is my explanation?**
   I am not an E-doctor, but I was sure some fundamental error must cause the trouble.

4. **Why didn't I use confirmatory factor analysis (CFA) as an alternative?**
   Because confirmatory tests downgrade the prime scientific goal, the discovery of latent determinants.

5. **Why didn't I trust SEM (Structural Equation Modelling) as an alternative?**
   Because discoveries of phenomena precede their confirmation and I did not consider myself to be a reliable discoverer.

6. **What should a reader of this message do?**

   - Trust yourself and look whether you find errors in my approach.
     Read as much as you need.

   - I here suggest conceptual and statistical redirections whose success can be checked in the next chapter (**Complex Structure Modelling** (**CSM**) that replaces **Simple Structure Modelling** (**SSM**).

   - In my books and papers, widespread doubts over habitual applications of factor analysis are replaced with hopes for a new beginning…

   - ... all this at the risk of indignation by factorists who may be reluctant to give up ostensibly binding conventions.

   - You may browse or download the book online without costs from my homepage at www.varimin.com. The print version is obtainable from bookstores or from Universitätsverlag Göttingen, jendral@sub.uni-goettingen.de Tel. X49 (0)551-39 78 09. If you have some spare time, read first a somewhat historical embedding.

7. Why should all this happen?

"Rebel with a Cause" is the title of Hans-Juergen Eysenck's (1990) autobiography. Eysenck, a calm champion of scientific reason, had found himself battling errors of a prevailing zeitgeist, hence the "rebel" attribute. He was convinced of his mission, he therefore added "with a cause".

I also embarked, with a different cause, on fighting fallacies of FA. My motive of calm reason might not suffice to prevent that its result is condemned, because peers may not appraise my disobedience. Long ago, at the beginning of my research, I employed factor-analytical methodology with enthusiasm. Its application was a must among contemporary methods. But I was incommodated by irritations. Why had the pioneers of this methodology (Spearman, Burt, Thurstone, Cattell etc.) to quarrel about groundwork issues? Why did their search of simple dimensions create hodgepodges of vegetable soups? I suspected something was not as it should be.

But how could I, a mere user of acknowledged mathematical algorithms, doubt what designers of the statistical tools believed was irrefutable. Could generations of demanding tool producers have erred without realizing that something was wrong? I suspected that Thurstone's Simple Structure model (SS) was unsuited, in principle, for most factorial goals. Nonetheless, I withdrew SS from its constraints only hesitantly. But I did withdraw it, because I consider complexity, and not simplicity, to be a dominant attribute of psychological functioning. Mental variables on the conscious surface are results of interacting factorial components on their latent level, they are not carriers of isolated information.

Thurstone had introduced a "Simple Structure" (SS) principle in 1935/47. He reasoned that initial complex solutions are uninterpretable because individual variables were generally loaded substantively across several factors. Thurstone considered it impossible to identify single factors in factorially multi-patterned variables. Therefore, he transformed an initial factor's coordinates by geometrical rotations until variables with highest factorial loadings were left over (SS rotation). Additional loadings of variables with factors, aside from those with highest loadings, were disregarded as uninformative. Thurstone's decision seemed to simplify the interpretation of factors. Despite some debate among followers and critics, his SS principle was deemed correct. It became the unquestioned Holy Grail of all further factor-analytic psychometrics. Only hesitantly did I reveal unwelcome side effects of the SS principle. I considered complexity, not simplicity, to be a general attribute of psychological functioning. Its variables are results of factorial structure, not of transmitters of elemental information.

But I wasn't sure and actually needed an incubation period of 30 years before I dared ignore Thurstone's dictate. When I did it, I replaced his **simple structure modeling (SSM)** with **complex structure modeling (CSM).** I discovered factorially complex structures by using an entirely new rotation procedure. I called it **Varimin** and noticed that Varimin-based complex structures could generally be interpreted easier than "simple" structures that resulted from applying the standard SSM Varimax procedure. Eventually, the dice were about to be cast.

Reading the books presupposes some basic knowledge of FA and multivariate data analysis, much like what is taught to psychologists, sociologists, and biologists in systematic introductory college courses. You need not be familiar with technical details. All you need is an open mind and the willingness to reconsider an entrenched methodical reasoning that by those, considering themselves as experts, might be harder to doubt than by less experienced researchers.